

THE AMERICAN REVIEW OF REVIEWS

EDITED BY ALBERT SHAW

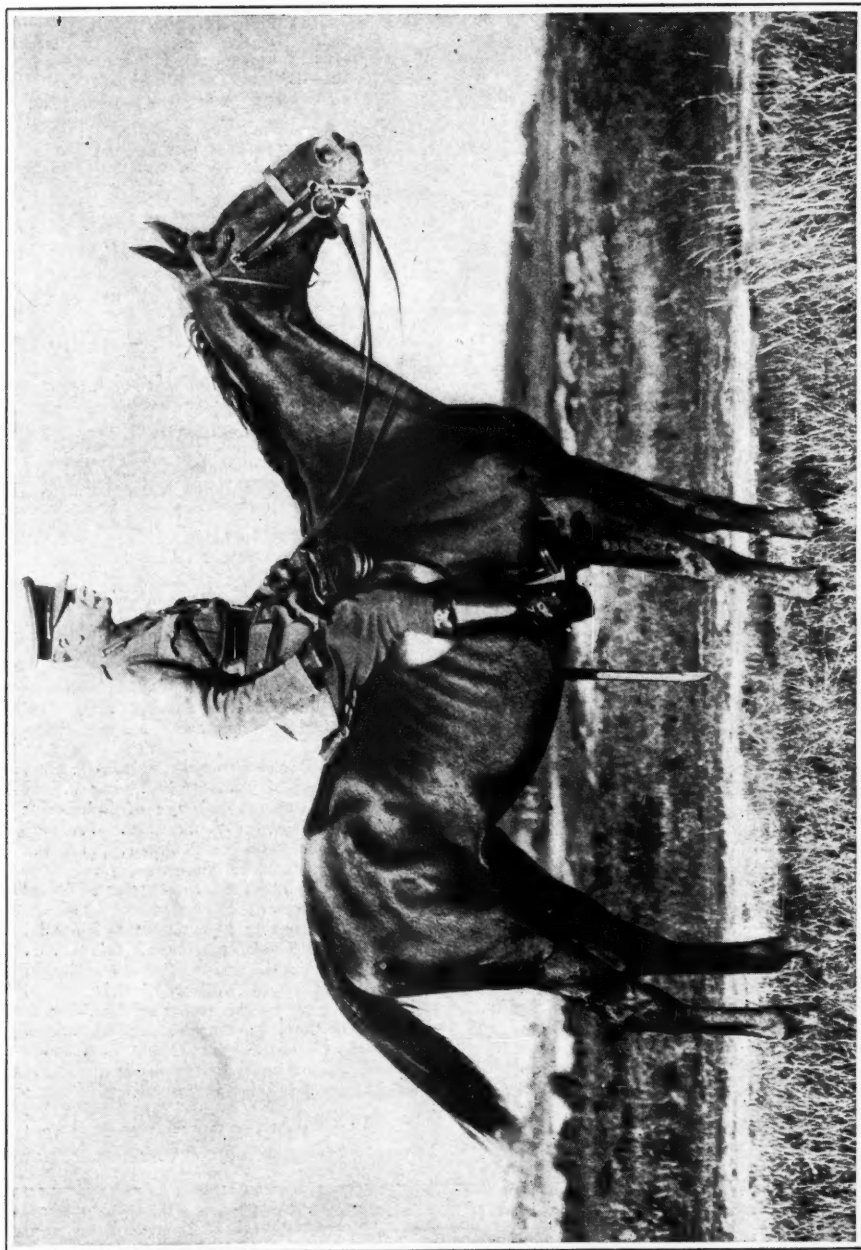
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FIELD-MARSHAL SIR DOUGLAS HAIG, COMMANDER-IN-CHIEF OF THE BRITISH ARMIES IN FRANCE AND BELGIUM

THE AMERICAN REVIEW OF REVIEWS

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No. 3

THE PROGRESS OF THE WORLD

*Creating an
Army of
4,000,000*

While Senators and Representatives were for the most part taking leaves of absence and visiting their home States in accordance with recess plans that had been unanimously adopted, certain decisions of great moment were made at Washington which required Congressional ratification and some curtailment of members' vacations. The main decisions were two in number, the first calling for an immense enlargement of the army, and the second calling for an extension of the age limits of the Draft law in order to provide for the requisite number of soldiers. It was proposed to have an active army of at least 4,000,000 men in the near future, and to have not less than 3,200,000 soldiers in France by the end of next May. We have now perhaps 1,400,000 men across the Atlantic, and the plans call for sending an average of at least 200,000 per month during the coming nine months. In order to obtain the men with the least inconvenience or disturbance of conditions, it had been decided to extend the draft age so as to include for registration all men between the ages of eighteen and forty-five.

*Results of
First Draft
Law*

Our first Conscription Act of the present war became a law on May 18, 1917, only a few weeks after we had assumed the status of belligerency. There was much opposition to that enactment and wide differences of view as to the proper age limits. Finally as a compromise it was agreed to register all men who were fully twenty-one years old on the 5th of June, 1917, and who were not beyond the age of thirty-one. It was expected that about ten million men would be registered under this act, and the estimate proved to be fairly correct. A few months ago the law was amended to authorize the enrollment of

young men who had reached the age of twenty-one during the period of a year or more following the first registration. It was expected that this would add another million names. This estimate, however, was far from correct, because so many of this increment had already joined the army and navy as volunteers. Out of a total registration of something more than ten million men it may be said that in round figures as of the date of September 1, 1918, 2,400,000 men have been selected and sent to the training camps. Of the remaining millions, a certain percentage has been exempted for physical reasons, another element because of enemy-alien nationality, and so on. The greater mass of registrants are in deferred classes by reason either of their having families dependent on them or of being occupied in essential indus-



GIVING HIM SOMETHING TO THINK ABOUT
From the *World* (New York)

tries, such as farming or shipbuilding. At first much mischief was done by the crudeness of the rules and the drafting of men whose work was vital, such as locomotive engineers, expert shipbuilders, coal miners, and the like. These mistakes were remedied by a revision of the rules and a better scheme of deferred classification. One of the chief defects of the system was the lottery scheme under which men were called up from time to time. It would have been better if all examinations and classifications had been immediate. The entire ten million might have been held under military authority and required to serve either in the army or in essential work, with limited home-guard drill and training for all of the men not called to the camps. Nevertheless, the draft system was a great success, and experience fully conquered all opposition.

*Decisions
Accepted*

In our opening sentence we referred to decisions that had been made and to the fact that Congressmen were summoned back to Washington to "ratify." In the case of the first draft, Congress made the decisions where points were in dispute, the War Department acquiesced, and the President ratified by his signing the bill on May 18, 1917. In the present case, the main decisions were made by President Wilson as commander-in-chief, with the concurrence of the Secretary of War and of the General Staff, headed by General March. Our readers may remember that it had been proposed, in connection with the recent army appropriation bill, to provide for an army of a maximum strength of five million men, this number having been called for by Colonel Roosevelt, ex-President Taft, and other public men. The President, however, had met the suggestion with the question, "Why limit the size of the army?" His proposal was to allow the commander-in-chief to call out men as they could be used, as they might be needed, and as the circumstances might require, in view of the labor demands of war industry and the ability of the country to provide ships, food, and equipment. There was no real difference of opinion, the ex-Presidents having rendered a very useful service by advertising to the whole country the fact that President Wilson would undoubtedly have to proceed rapidly and make the army of 1919 fully double that of the present summer. Before the Senators had gone for their recesses they had proposed to extend the draft ages, but Secretary Baker

was not quite prepared to have the action taken. The Administration had first to satisfy itself that the country would willingly accept so radical a decision, and next to be sure that it would be physically possible to carry out the stupendous undertaking of having a trained and equipped army of 4,000,000 men before next June, with four-fifths of them on European soil. Urgent requests and assurances meanwhile had come from the Allies, and our resources of labor and supplies had been fully canvassed.

Thus, the President having decided, it was plain that Congress had only to ratify, because there was no effective opposition in any quarter to an enlargement of the nation's war program. Mr. Baker and General March had made their statements to the Military Committee of the Senate, presided over by Senator Chamberlain, and to that of the House, under the chairmanship of Mr. Dent. The enrollment of eighteen-year-old boys was a point evidently involving clear differences of opinion. Military men always favor the enlisting of the very young, because it is much easier to drill them, hold them under discipline, and give them the semblance of a body of soldiers. It seems to be the best testimony of experience in the present war, however, that the maturity of older men, with more development of mind and body, is desirable for the kind of work that has to be done. Some boys, of course, are much more mature at eighteen than are others, and our Washington authorities are humane and reasonable. They have no intention of launching a "children's crusade." They will put an end to what has been a rather ill-controlled movement of voluntary enlisting on the part of the youngsters, and will apply



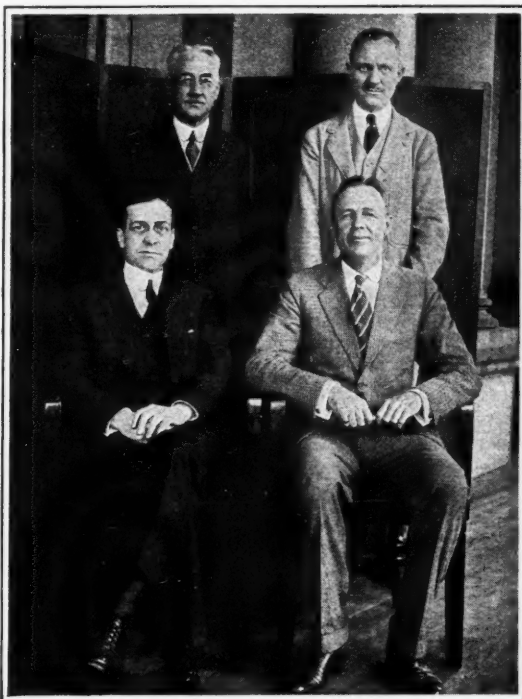
KARLOBUS DISCOVERING AMERICA
From the *Evening News* (London)

more scientific principles of selection than could be possible under the old methods of drumming up boy recruits for the navy, the marines, and other war-time services.

For lack of quorums Congress could not take up the proposed measure until after Monday, the 19th, but it was certain enough that all the main points decided upon by the Administration would have the concurrence of the two chambers. It was hoped by General Crowder, in his capacity as Provost Marshal, that a somewhat early day in September might be fixed for the registration of about 13,000,000 names, of which 10,000,000 will consist of those men who are between the ages of thirty-one and forty-five, while the remainder will consist of the boys between eighteen and twenty-one. It is not intended to change in any radical way the existing scheme of classification. It is probable, however, that there will be added some new rules applicable to the boys under twenty. Already the authorities at Washington had been able to accomplish good results by compelling those in deferred classes to work steadily in approved callings, under penalty of being put into the first draft class and sent peremptorily into the army. It is obvious that when we have a total enrollment approximating something like 25,000,000 names of men between the ages of eighteen and forty-five we shall have a country that can be made to realize in a wholly new way the fact that we are at war and that every able-bodied man must "work or fight." Concentrated effort on essential lines will fill the labor gaps.

Comment in the Historical Tense

The reason for our extraordinary movement of men to Europe in the months of May, June, and July has already been fully stated. The British and French armies were in danger because they lacked sufficient reserves to meet the enormous concentration of German military strength on the West front. Our supply of a million men in short order relieved the strain. The British, French, Italian, and American armies became one great force under the supreme command of General Foch. The German offensives were checked and Allied counter-offensives were



© Harris & Ewing
SECRETARY BAKER, WITH THE THREE ASSISTANT SECRETARIES OF WAR

(Sitting: Secretary Baker (left), Assistant Secretary Crowell. Standing: Assistant Secretary Stettinius, Assistant Secretary Keppel)

skillfully directed and gallantly executed. The initiative, after the middle of July, had passed from the German High Command to the Allies. The immediate object had been to meet a situation which threatened the loss of Amiens, of Rheims, of Paris, of the Channel ports. This crisis had been completely passed by the middle of August. How it had been accomplished is most admirably explained for our readers in Mr. Simonds' indispensable article in the present number of this REVIEW, following his remarkably accurate analysis and forecast contributed to the August number. It is now certain that Germany cannot win the war on the Western front this year. The Emperor and the High Command had promised to the German nation a peace this summer as the result of overwhelming victories, including the occupation of Paris. They came perilously near succeeding; but we are already able to admit this as a comment in the historical tense, quite as if we were talking about something that had happened long ago. Leaving the historical tense, however, and returning to present things, it is conceded

that the Allies have not yet sufficient military strength to drive the Germans back to the Rhine in what remains of the fighting season of 1918.

*Now for
Supreme Effort
—then Peace*

We may hope to see a very considerable retirement of the Germans toward the Belgian line before winter, but all military authorities on the Allied side warn us not to expect too much. America entered the war to help the right side win, and to establish peace on sound principles at the earliest possible moment. In order to end the war decisively in the year 1919, every one of the Allied powers must exert the greatest possible energy. When you make war you must concentrate, and your effort must be supreme. Otherwise you prolong the war, sacrifice life in greater measure, and multiply every kind of misery and disorder. What we propose to do, therefore, is to meet Germany's military challenge and to crush Teutonic force by the sheer preponderance of Allied force. There is not the faintest present indication of any other decent alternative. Never at any moment since she began the war, more than four years ago, has Germany been more fully committed to policies of conquest than during the past few weeks. Never at any time in all the centuries, if we read history aright, has it been more necessary than at this time to meet military aggression in the name of liberty and human rights. It is proposed, therefore, by the Allies, not to compromise with German militarism but to defeat it thoroughly; and this can be done only by organizing forces so powerful that it would be useless for Germany to make a prolonged resistance.

*Safety in
Numbers*

It is true that we do not wish to sacrifice the valued lives of our heroic American soldiers. It is plain, however, upon a moment's reflection, that the best way to save the lives of those who have already gone to France is to give them the largest possible support. Our men will fight in any case; and the stronger they are in numbers and equipment, so that they may overpower the enemy, the smaller will be their sacrifice of life. We have now the mechanism for receiving great numbers of untrained men and converting them into soldiers. It will be much easier to train the second million and the third million than it was to make soldiers out of the first million. We have started on the road of peace

enforcement, and we propose to make the journey successfully.

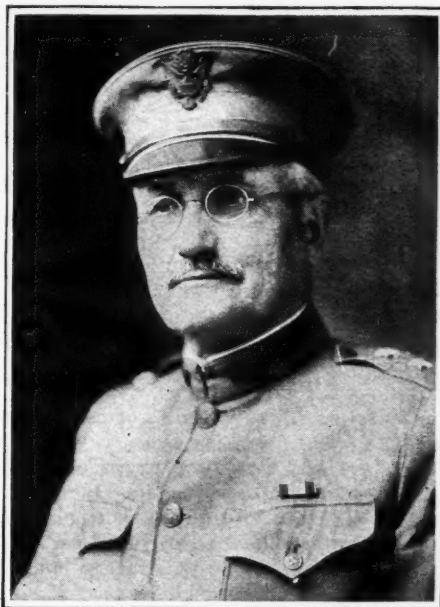
*Forging the
New
Weapons*

It has been remarked more than once in these pages that what is called "man power," and estimated in numbers of divisions or in millions of soldiers, must be understood as implying also the modern equipment—something far more complicated than the calling out and training of men. Our young Americans are capable and brave, but they cannot stand up against Germans who are supplied with modern war mechanisms, unless they are also supplied. Much the more perplexing part of the preparedness job is that which belongs to the war industries. There has been some temptation at Washington to glorify our performance in the one direction, while obscuring our achievements in the more difficult half of the business. It is true that with the help of British shipping we can have more than three million men in France by next June. But the Germans are fighting this war with deadly weapons and agencies, in some of which we are as yet inferior. It is understood that the immense gains of the Germans in their offensives this year were won chiefly by the use of what is known as "mustard gas." The Allies are also using this weapon, but thus far the Germans are far superior in their ability to make and use such stuff in large quantities. Under General Sibert's direction we are just now entering upon a large gas-making program. Professor Baskerville, who is himself in the very heart of these scientific efforts, writes a valuable article for our readers this month on the whole subject of the use of so-called "gas" by the Germans in the present war, and the measures that are now being taken to meet them on their own ground. There is much, of course, that cannot as yet be told.

*The Aircraft
Program*

It is stated that we are soon to have reports: (1) from the Senate committee that has been investigating our aircraft situation, and; (2) from the searching scrutiny of the Department of Justice aided by Hon. Charles E. Hughes, into the charges of waste and misconduct in the use of money appropriated for aircraft production. Careful newspapers have of late been saying very little upon this subject, partly because they have been baffled in trying to find out anything reliable. It is obvious that we have trained a great many aviators, and it is certainly true that we are

using aircraft on the fighting front. That there begins to be an appreciable use of American-made airplanes for bombing and other purposes at the front, is now officially reported. There can be no present doubt about the vigor and intelligence of the Government's effort to produce aircraft; and we are justified in believing that the program will be successful on a very large scale in the near future. The most difficult thing was to make powerful engines in large numbers, and this we are now doing in the perfected Liberty motor, about the valuable character of which there is abundant testimony. It is plain, however, that this new business of aircraft production is in its infancy, and we must be prepared to meet German inventions with further inventions of our own. We seem to be on the eve of the making of very large bombing planes, and already it has been shown that aircraft can do some of the work of heavy artillery. As for the guns themselves, it will strain our ordnance program to give an adequate supply of artillery to the large armies that we are about to create. We are making many machine guns, but not enough. Thus, to repeat our warning, it will be relatively easy to enlist, drill, and transport what in its personnel will be incomparably the finest army in all history. But it will be far more difficult to give these splendid men the quantities of aircraft, artillery, "gas" shell, and other kinds of weapons and supplies, without which we shall have put them at a cruel disadvantage, and subjected them to an otherwise needless loss of life. Hence there must be redoubled effort to make munitions.



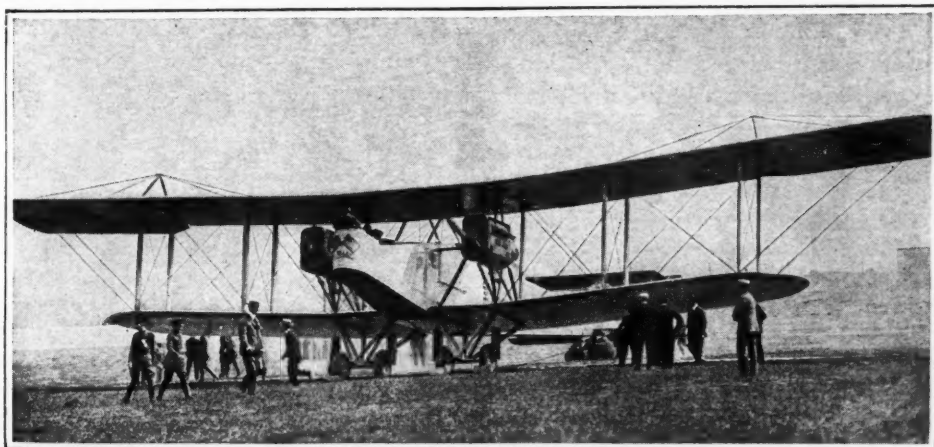
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MAJOR-GENERAL WILLIAM L. SIBERT

(General Sibert recently returned from France and is in charge of the new American program described by Dr. Baskerville [see page 273], which is to produce gas shell on a large scale and devices for protection against enemy gas)

*No Trifling in
War Work!*

The one great business of civilians, therefore, must be to see that the army has its full industrial backing. This means a variety of practical things, some of which we shall proceed to specify. First, there will be a great scarcity of labor for direct war industry, such as shipbuilding, steel-making, and the like,



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AN IMMENSE HANDLEY-PAGE BOMBING PLANE, BUILT IN THIS COUNTRY, USING TWO "LIBERTY" MOTORS

unless there is fully as much discipline in the moral sense among industrial workers as among the men who wear the army uniform. The men at the front will not be in a mood for trifling at the rear. The Government has the power at any moment when it thinks best to make the railroads of the United States just as much a military service as it has made the railroads that it operates in France. We have immense shops, factories, and industrial establishments in Europe, as directly controlled by military authority as are the battalions on the fighting front. If efficiency requires it, we shall carry on all of our war industries in the United States under strict military discipline, with every man in uniform. But that will not be required.

*The Slovenly
"Cost Plus"
Contracts*

At the outset we made a great mistake in building the cantonments through the employment of contractors on the slovenly "cost plus" plan, instead of telling the army to build its own cantonments through its own engineer corps and other suitable branches, just as we now do things in France. We were drafting hundreds of thousands of men from all the skilled trades, and these men in their capacity as soldiers should have rendered the Government the services for which they were best qualified by previous experience. The failure to do these things in the right way

has cost the Treasury already many hundreds of millions of dollars, not to mention the greater cost that has accrued to the country at large through the demoralization of labor and industry as a result of extravagant methods in public work.

*War Work
Must Be
Energetic*

The country is well aware that it is paying very fancy prices for all the war supplies it gets, and it will be content to pay the bills if certain conditions are met. The first of these is that there must be efficiency. The cost of living in the industrial districts has perhaps risen 40 per cent. The public is willing to have wages continue to stand at a level that will much more than meet the increased cost of living. But it is not willing to put up with slack labor or irregularity. The Government provides labor boards with power to adjust all grievances, and there is no excuse for strikes. Twenty-five million men, whose names will be registered for military service under the draft acts, must either fight or work; and if their work is not continuous and energetic they should be put at once into the fighting class. When once registered under the draft acts every man of the entire twenty-five million is precisely as subject to the call and to the orders of the commander-in-chief of the armies of the United States as are the men who have al-



A CRIME AGAINST OUR ARMY

(An English cartoon, fortunately not now applicable to the American situation)
From *Opinion* (London)



REGISTERED MEN UNDER THE FIRST DRAFT WHO WERE IN DEFERRED CLASSIFICATIONS, CHIEFLY BECAUSE OF HAVING DEPENDENTS, AND WHO UNDER RECENT RULINGS HAVE BEEN OBLIGED TO REGISTER AT GOVERNMENT EMPLOYMENT OFFICES IN ORDER TO ACCEPT TRANSFER FROM NON-ESSENTIAL EMPLOYMENT TO WAR INDUSTRY

ready been sent to France. It must not be supposed that we have a commander-in-chief who would hesitate for a moment to use his power and to see that those who were kept at home to do war work were serving the country as faithfully as those who were risking their lives at the front.

*A Badge for
All Regis-
trants*

It would be very desirable if all of the twenty-five million military registrants should from the very day of registration be deemed potentially, if not actively, in the Government's military service. To that end, in our opinion, it is not enough that each one of them should, as at present, be required to carry about with him a registration card. They should also be proud to wear some kind of clearly distinguished mark—a badge of metal, a brassard on the sleeve, a designated kind of headgear, or whatever might be deemed best. The millions of these registrants who are not called are sacredly bound in duty to work hard to back up the 15 per cent. or more of their number who will be needed for soldiers. Any badge they might wear would be a mark of honor. It would mean that they were ready to go to war if called, and were pledged in any case to support the war by rendering their best services wherever the Government might prefer to have them work.

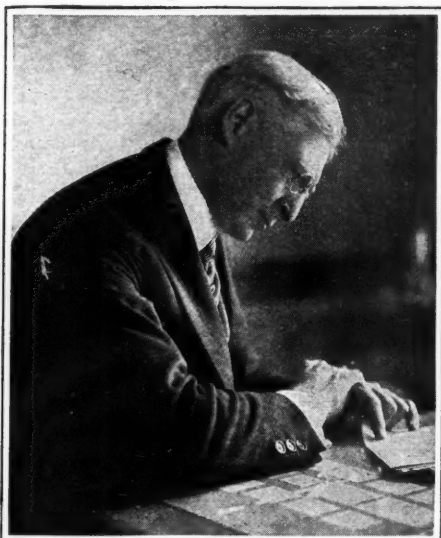
*The Public
and Fuel
Economy*

For our entire country, not counting insular possessions, the present estimated population is about 104,000,000. This great population must do its share by accepting war conditions. Many millions thus far have been making money, wasting food and other essential materials, having fun, and shirking

their part. At this moment war industry is suffering for lack of sufficient steel and other materials. It will suffer still more, perchance, for lack of sufficient coal. The entire population must help to meet this crisis. Let every reader of this REVIEW, especially the women, study carefully the two articles that we are publishing in this number, on the subject of the domestic use of fuel. These articles are intended to show you how you can readily save from 20 to 40 per cent. of your usual winter coal supply and still keep comfortable with positive benefit to the health of your family. Both of these articles are written by men who speak with authority. Public-spirited women who wish to help win the war can do so by teaching their neighbors how to save fuel as set forth in these articles. In many neighborhoods coal can be saved and railroad transportation relieved by a larger use of wood. It is astonishing how much wood goes to waste in the form of decaying trees, dead branches and the like. In Europe all such material is carefully saved and used. American women should dress more warmly indoors and keep the thermometer nearer 60 degrees Fahrenheit than 70.

*Food Saving
No Real
Hardship*

The saving of food has been so efficiently preached and has been so well organized by patriotic women following advice of the Government that we may merely remark that we can do still better without harm to ourselves and with great benefit to the war cause. Most people are better off for restricting the use of sugar. A consumption tax on sugar of several cents a pound would do little harm in connection with the rationing. Most people make their tea and coffee far too



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MR. BERNARD M. BARUCH, OF NEW YORK
(Whose work as chairman of the War Industries Board grows more sweeping and efficient as the need of devoting the nation's resources to war ends becomes imperative)

strong. There should be a large revenue tax on tea and coffee which everybody could pay with ease by the simple device of using more hot water. It has not been creditable to millions of otherwise intelligent American women that they know so little about cooking and real food values. The country is fast learning to use more peas and beans and less meat. It is saving transportation by securing a higher percentage of its food supply from home gardens and other local sources. If we send—as we will—more than three million of our men and boys to France it would be an eternal disgrace not to keep them supplied with plenty of good food from home. We can only be sure of doing this by stopping all waste, restricting the use of wheat and beef, and applying both brains and industry to the food conservation problem. Let us “Hooverize” for another year!

*The New
Phases of
Conservation*

In discussing these matters afresh we are doing it in the light of a wholly new problem, created by the vast expansion of the Government's military program. We shall have much greater need to economize in food and in fuel this coming winter than last winter. Everywhere in the world there is a great scarcity of wool, and while for the sake of health we should dress comfortably in winter, it should be made disgraceful to dress

extravagantly. There will be nothing so vulgar and so far from good form as to pay undue attention to alleged “fashions” as regards costume. In every other country on earth, all people, whether rich or poor, are thankful if they possess a supply of old clothes, and they regard it as patriotic to bring to light discarded things and leave the entire new wool crop for army use. This is no minor affair, but a deadly serious one. Last year hundreds of our boys died in the camps because cold weather overtook them before the Quartermaster's Department had got their winter uniforms and overcoats ready. Civilians will have to buy many articles of dress; but it will help all trades, including the clothing trade itself, if every man, woman, and child gets as much wear as possible out of garments already in hand. Give the new wool to 4,000,000 soldiers!

*Automobile
Makers for
Other Work*

That the Government means business in the field of war industry has been shown in many ways during recent weeks. Thus the principal automobile makers went to Washington last month and offered to cut down their manufacture for the coming year by 50 per cent., as a matter of economizing in steel. They were somewhat surprised at first, when Mr. Baruch, as chairman of the War Industries Board, informed them that they must reduce their output by exactly 100 per cent., because, beginning with next January, no passenger cars whatsoever could be made. He went further and stated that certain forehanded manufacturers who had bought large quantities of steel ahead must consider that the Government would requisition as much of that raw material as it might need for its own purposes. The automobile-makers are as public-spirited, intelligent, and patriotic citizens as any others, and of course they accepted the Government's view in the right spirit. This will not mean disaster, inasmuch as there will be ample need of their great plants for making army trucks, farm tractors, aircraft parts, and a variety of other things that the War Industries Board will designate as essential. These great aggregations of capital and labor can be changed from their normal business to some kind of Governmental production with great advantage because their armies of skilled workmen are already domiciled in the neighborhood, while much of their physical plant can be used with slight alteration. The more readily and completely the automobile

industry turns to war work the sooner it will be able to resume its regular part in the business of a happy and prosperous country. Look out for a great 1920!

*Care in the
Use of Motor
Cars*

Meanwhile, there are several million automobiles in use in the United States, and most of them, with reasonable care, can be kept running for several years longer. It would be a mistake to think of them as chiefly used for mere pleasure that becomes reprehensible in war time. They have become an essential part of our transportation system. The physician uses them in his practice, the farmer employs them for necessary errands, and their use promotes war effort far more than it hinders. But here again is an opportunity for the exercise of conscientious care. Rubber is scarce, and tires should be subjected to as little wear and tear as possible. There is a serious shortage of petroleum supplies, and gasoline should not be used too freely. An English officer waiting to cross Fifth Avenue the other day remarked that there were probably more motor vehicles in use in New York City alone, of the passenger type, than in the whole of Great Britain. A reasonable use of automobiles makes for war efficiency. There is an element of waste

and extravagance that could be, and should be, largely eliminated.

*America as
the Land of
Luxury*

The people of the United States have been wholly unconscious of the rapidity with which they have advanced from comparative poverty to unequalled affluence. Most people in all countries, and through all ages, have lived close to the border-lands of famine and epidemic. No great population in all history was ever so luxurious as the people of the United States have been in recent years. There has been an amazing advance in the standards of living; and we should aim to have both town-dwellers and country people live still more decently and agreeably in years to come. But a high standard of living is compatible with simplicity and thrift. There are men now living in Washington who remember when it was a common thing to see cabinet ministers, Senators, and members of the Supreme Court going to market in the morning, with their baskets, and carrying home the supplies that they had frugally purchased. It is not, however, a question of returning to old ways of living, but rather a question of utilizing wisely our new advantages. In his book on America, written a few years ago, a famous French



A SCENE ON FIFTH AVENUE, NEW YORK, SHOWING THE CUSTOMARY LINES OF AUTOMOBILES



TWO FAMOUS BRITISH LEADERS

(Rt. Hon. Arthur J. Balfour, Foreign Minister, and Field-Marshal Sir Douglas Haig—from a photograph taken in the gardens at Versailles, during a recess of the Inter-Allied Conference)

Senator, d'Estournelles de Constant, declared that his own country could live in comfort upon what Americans waste and throw away. When the French, after their defeat by Germany, had to pay an indemnity of five thousand million francs, the peasants met the bill out of their savings. At a later period they lent Russia still larger sums which Russian savings must some time repay. Meanwhile, our war bills will be increased with the new army program, and at least twenty million different Americans should by thrift and saving be able to subscribe for the Fourth Liberty Loan, soon to be offered to the public.

*The Other
Allies Not
Relaxing*

Let no reader think that our Government is now so enthusiastic for war that it wishes to bear the whole burden and allow the Allies to step aside. Such an idea would be far from the truth. Our enlarged program grows out of the decisions of the Inter-Allied Council, sitting at Paris; and the other nations are going to do their part without stint. Germany's culminating effort has to be met in the only way that seems possible. The United States intends to concentrate on the Western front. Italy proposes virtually to double her army, with the understanding

that the other powers are to help her with equipment. This means that England must give Italy a great deal of coal, and that domestic users in England must make sacrifices of fuel in order that war demands may be met. India's cooperation with England is taking the form of an immediate new levy of half a million soldiers, and it will be no small task to find equipment for them. India will furnish a number of new army divisions with which to push the war against Turkey. The British will maintain their own army in France at full strength, while doing their best to meet the demand for munitions and war supplies. It is needless to say that the French, having endured for more than four years, will toil and fight at their best through another year in view of the strong support that comes from America.

*Complete
Cooperation
of Allies*

In short, the Allied Council proposes to increase the pressure against the Central Powers on all fronts. Germany is to be given no rest, and is not to be permitted to enjoy ill-gotten gains. It is proposed to give the Germans the utmost possible trouble in Russia, and to make war a worse burden than ever for Austria, Bulgaria, and Turkey. It is intended to find ways to make the Allied navies more than ever effective for victory. And while there are on foot these great plans that are expected to produce the collapse of the military league of the Central Powers in the year 1919, it is not for a moment proposed to postpone any advantage on land or sea or in the air that can be gained by suitable effort in the present season. The Allies are learning not only to unify their strategy and to accept a single leadership, but they are also learning to pool their resources, realizing at last that, in a situation like the present war, not to help one's friends to the utmost is virtually to help the enemy.

*Tumult
on Russian
Borders*

Mr. Stoddard, in the present number of the REVIEW, makes note for us of a series of situations along the Russian borders, from Finland to Rumania, that Germany has been trying to assimilate for her own permanent political and economic benefit. It is quite possible that all these territories may prove to be liabilities rather than assets. It has been the plan of Germany, while wearing the French and British armies out on the Western front, to make permanent and accepted facts out of her new relations with Finland,

the Baltic Provinces, Ukrainia, Rumania, and so on. Germany's most recent plans have contemplated the establishment of a new Czar upon the throne of a Russia much reduced in size, and it has also been planned to have a German prince chosen as King of Finland, with other German princes made Grand Dukes or Kings all along the line. Unfortunately, however, for these plans, there has been a steadily rising tide of Russian hatred for all things German, as indicated by ominous assassinations. Since Russia must have outside assistance, it had become last month a sharp issue whether the Allies should be allowed to give their kind of help or whether Germany's gentle ministrations should be preferred.

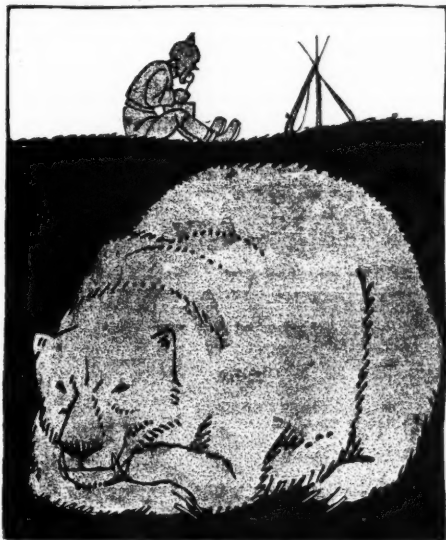
*Surprising
Situations
in Russia*

It is hard for Americans to realize how vast in territorial extent was the Empire of the defunct Czardom. Most of it is now in a state of seething chaos. The so-called Soviet government of the Bolsheviki or "Red socialists," headed by Lenine and Trotzky, appeared to be crumbling to pieces during August. The Cossacks of the Don who had been fighting the Bolsheviki were victorious in a large area. Other revolutionary elements, in sympathy with the Allies and against the Bolsheviki, had organized a local



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GENERAL FERDINAND FOCH, MARSHAL OF FRANCE
(From a new official photograph)



RUSSIAN BEAR: "BECAUSE HE CAN'T SEE ME, HE THINKS I DON'T EXIST"

(The cartoons in Spanish papers show a wholly new sympathy with the Allies, having for a long time been pro-German)

From Iberia (Barcelona, Spain)

government in the far north, with Archangel as headquarters, and were welcoming aid from small forces of the Allies which had been landed both at Archangel and upon the Kola Peninsula. At Vladivostok the Japanese had been landing forces, while an American regiment or two transferred from the Philippines, and other detachments of Allied soldiers or marines were coöperating with a considerable body of Czecho-Slovaks, and helping to hold the Siberian Railway and to deliver Eastern Siberia from the Bolsheviki. In far western Siberia, near the line of Russia proper, was a detached body of Czecho-Slovaks who were short of supplies and in danger from the Bolsheviki and the large mass of former German and Austrian prisoners who were being armed and supported by the Bolsheviki leaders. On the Caspian Sea at Baku a small force of British troops had arrived to support the resisting Armenians, having spent some months in an adventurous march of hundreds of miles northward from Bagdad. Reinforcements from India were arriving, and the German plans for control in Mesopotamia and for possession of the oil region bordering on the Caspian were seemingly very far from realization. The news was increasingly hopeful.

*Deliverance is
Coming*

So absorbing at the time was the news from the Western fighting front that less attention was given than otherwise might have been expected to the execution of Nicholas II., the deposed Russian Czar. When the history of the period falls into its true perspective the collapse of the Czardom and the death of Nicholas will have as great a place in history as the revolution of Cromwell's time and the execution of Charles I., or the French Revolution and the guillotining of Louis XVI. The Czardom was a baneful web, superimposed upon Russia, a thing incurably bad, incapable of reform, meriting nothing short of complete destruction. Its nature and meaning are best described for American and English readers in a recent notable book called "The Eclipse of Russia," by Dr. E. J. Dillon. No other living Englishman or American has known even a small fraction as much about the inner politics of Russia and the working of the system as Dr. Dillon, who came to America as the confidential friend and adviser of Count Witte when the peace of Portsmouth was negotiated, after the war with Japan. Russia is going through a series of terrible experiences; but with the help of America and the Allies there will come into being a modern Russian people and government.



THE KAISER HEARS DISTURBING NEWS (MURDER OF THE CZAR)

"Know the grave doth gape
For thee thrice wider than for other men."
—"King Henry IV."

From *Western Mail* (Cardiff, Wales)

The Czardom is gone, never to return—though Germany has meant to restore it, and the plague of the Bolsheviki is bound to pass, like a deadly but transient visitation of cholera or some other epidemic. The forces of sanity and patriotism will assert themselves in due time, and the difficult but promising business of creating the New Russia will be undertaken.

*Austria's
Bad Imperial
Outlook*

The Czecho-Slovaks in Russia are thousands of miles from home, but they are making a stand that is effectively bringing about the future independence of their own country. These are the people best known to us as Bohemians; and the region that they propose to establish as a separate country consists of Bohemia, the adjoining province of Moravia, and a long strip of country east of Moravia occupied by the Slovaks, who are a kindred people in the Carpathian mountains of Northern Hungary, and whose Slavonic language is similar to the Czech or Bohemian. The Bohemians and Moravians are among the most worthy and progressive of European races and their best known leader, Dr. Masaryck, is now in this country. The British Government has announced its recognition of the nationality rights of the Czecho-Slovaks, and the Austro-Hungarian authorities are much disturbed. If the Bohemians are to have full sovereignty as a new European state there must be a thorough-going dismemberment of Austria and Hungary. Italy has already recognized and favored the plan of a South Slav state (Jugo-Slavia), to comprise a union of Serbia, Bosnia, Croatia, and adjacent districts, made up of kindred peoples and constituting a country of perhaps a hundred thousand square miles with from twelve to fifteen million people. Thus the longer the war goes on the more dismal becomes the outlook for the Hapsburg dynasty.

*The Rival Maps
of Eastern
Europe*

Undoubtedly the young Austrian Emperor is deeply alarmed, and more than ever anxious for any kind of peace that will save his dominions. He was in conference with the German Kaiser last month over the pressing military and political problems. It was reported that Germany was demanding a number of divisions of Austrian soldiers for help in France, and that the Emperor Karl was in return demanding an Austrian, rather than a German, future control of Poland with an

Austrian prince upon the proposed Polish throne. With the dismemberment of Russia, the prospective dissolution of the Hapsburg domain, and the necessary rearrangement of Balkan boundaries, the statesmen of Europe have before them a series of problems in political map-making which make those of the Napoleonic era seem quite easy and elementary. It is not likely, however, that these problems will greatly prolong the war. If Germany wins in the fighting the Allies will have to accept the Teutonic map of Eastern Europe. But if the Allies defeat Germany it is plain that the Hohenzollerns and the Hapsburgs will have little to say about the future of Poland, of Bohemia, of Serbia, of Rumania, of Albania, of Constantinople, and of Asiatic Turkey. It will not be easy to reconcile some of the rival claims of meritorious little nationalities; but the spirit of justice, reason, and freedom will be in control, and the League of Nations will see that decisions once made will not be subject to further dispute.

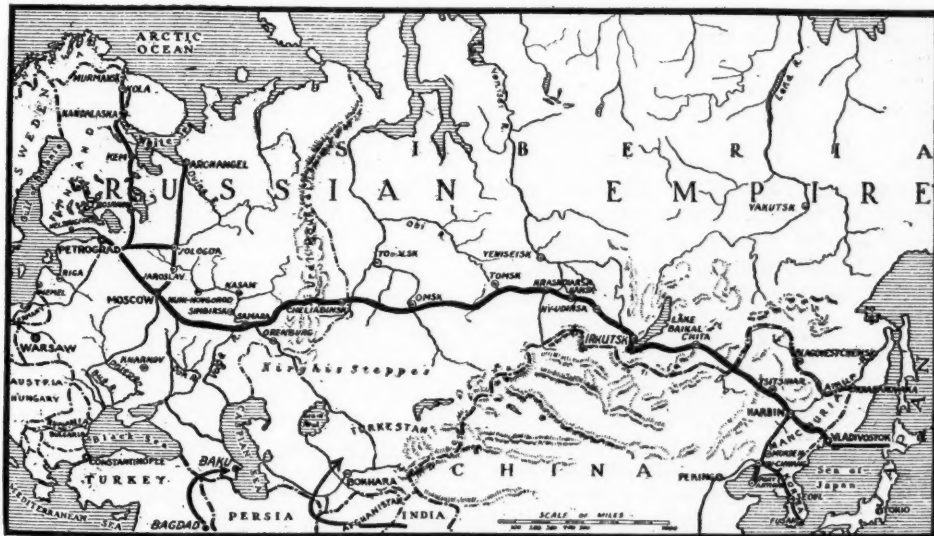
*Allied Stock
Rising in
Neutral Markets*

Undoubtedly the European neutrals have begun to be aware of a decided shifting in the war situation, and the partisans of the Allies are becoming more outspoken and popular in Sweden, Holland, and Spain than they were in June. The change is particularly marked in Spain, where the national self-respect has begun to assert itself against the shameless

German influences which had been so much in evidence. Germany's sinking of neutral ships will now be more bitterly resented with every fresh sign of Allied military superiority. While of course the small neutral countries are the domiciles of many German business men or German agents, the great majority of the people in the Scandinavian countries, in Holland, and in Spain are horrified at Germany's brutality and greed, and would rejoice to see the Kaiser's power broken and his armies crushed. Now that they are relieved of their former dread of Russian despotism, the small countries around the Baltic would be glad to see Prussian despotism go the way of the Czarism. Sweden's relations with England, America, and the Allies have made a notable improvement within two months.

*South America
More
Friendly*

The Government at Washington has shown courtesy and good will to Latin America, and there have been signs of a steadily growing appreciation of the motives of the United States in its war efforts. Statesmen, editors, and business men from Argentina, recently visiting this country, have helped to promote cordial understandings; and it would be desirable if there could be many more groups of influential Latin Americans brought here in the near future to witness our military progress, our war-time industries, and our unity as a nation. They could not fail to



THIS MAP WILL BE CONVENIENT BECAUSE OF ITS INDICATION OF MANY PLACES MENTIONED IN THE NEWS REGARDING SITUATIONS IN RUSSIA ALL THE WAY FROM FINLAND TO THE BLACK AND CASPIAN SEAS, AND FROM PETROGRAD TO VLADIVOSTOK

discover for themselves that Uncle Sam has no designs upon his neighbors, and that he wishes to see them progressive and successful. It seems likely that Argentina might have adopted the policy of Brazil and followed the United States against Germany but for the attitude of President Irigoyen and the prodigious efforts of a group of German agents and business interests. Brazil and Cuba are training armies and preparing for an active part in the war.

Central America and the United States Following the lead of the little republic of Panama, its Central American neighbors, Guatemala, Nicaragua, and Honduras have joined the list of the belligerents under the auspices of the United States. Costa Rica and San Salvador have not yet taken this step, although they are likely enough to do so. There are certain duties in the fields of diplomacy and finance that the United States has been neglecting in Central America and that should be performed at once. Only experienced men who understand Latin Americans and know the local conditions in Central America should be sent there as diplomatic or consular agents. We have a great and useful part to play in the development of all that region, and this can best be done by the most generous and friendly coöperation with the local governments and peoples. Soon after the war is ended we shall doubtless be digging the Nicaragua Canal.

Mexico's "Sovereignty" Overstrained

Not long ago a group of Mexican editors visited the United States, and they were well received. It was hoped that they might help Mexico to rid herself of the pernicious German influences that have been trying so hard to make her a bad neighbor for the United States, not for Mexico's advantage, but solely for the purposes of Germany. The Carranza government in its aims and motives is not always easy to understand. It owes its very existence to the policies pursued by President Wilson. In view of all the facts, the Carranza government in Mexico should have been the first in the Western Hemisphere to follow Uncle Sam into a declaration of war against Germany, not even waiting for Cuba's prompt action. But this curious government, instead of taking its loyal stand with its own continent, gave everybody the impression of desiring to see Germany victorious. There is a quality in this Mexican government that reminds

one of the Lenine-Trotsky régime in Russia. In pursuit of our policy of forbearance and self-denial, we looked on for years at the course of revolutionary chaos in Mexico, and witnessed the destruction of hundreds of millions of dollars' worth of property belonging to American citizens. We are now protesting against a governmental Mexican policy which is said to have threatened a confiscation of British and American oil properties in the Tampico districts. The result might have been a subsequent refusal to permit the Allies to use the petroleum, on the pretext of Mexico's duty as a neutral. Carranza's foreign minister supported his position with a high-sounding but offensive note to the British Government, setting forth the theoretical doctrine of national sovereignty. Such a doctrine has its place; but it is grotesquely out of place when used as a pretext for essentially injurious and hostile acts. There is no danger that England and the United States will do any practical injustice to Mexico's sovereignty. She would have had none at all but for them. Meanwhile the British and American oil companies have some reason to expect that they will be protected in the carrying on of their industry and the export of their product. If anyone wishes to be assured of the general unselfishness with which the United States orders its international affairs it is only necessary to study the history of our relations with Mexico since 1912.

Submarines—A War Failure

Losses of Allied and neutral shipping through German submarines and mines continue to be very large, but from the standpoint of German war aims and objects these hideous depredations may now be pronounced a complete failure. The submarine blockade has not prevented the arrival in English ports of ample supplies of food and raw material. It has not prevented the movement of British and other Allied troops. Neither has the U-boat menace availed anything to diminish the flow of American troops and supplies to France. The policy has not, then, served any vital war purpose for Germany. It has been merely a policy of destruction and cruelty, involving the loss of lives and property without contributing to the ultimate saving of life through the ending of the war—which could have been the only plausible excuse for it. The United Kingdom, Japan, and other countries are building many ships, while the United States, through the Ship-

ping Board and the Fleet Corporation, is increasing its output every month. President Wilson last month visited the Hog Island shipyard at Philadelphia and witnessed the launching of its first vessel. It will be turning out many fabricated ships from this time forth, and is already the largest shipyard in the world. But we have many other large yards; and non-essential industries will curtail operation in order that there may be plenty of steel for ships. Moreover, the Allied navies become more effective month by month in their protection of supply-ships and transports and in their methods against submarines. The German people were told that the submarine would quickly win the war, but they are waking to a realization of the failure of this criminal policy. Peace talk is useless while such practices continue.



SECRETARY WILSON, OF DEPARTMENT OF LABOR
(Whose jurisdiction is vastly increased with the transfer of millions of workers to industries that sustain the war. Mr. Wilson's patriotism and intelligence have been fully demonstrated)

Sept.—2



SECRETARY M'ADOO (ON THE RIGHT) HAS RETURNED TO HIS POST IN RESTORED VIGOR. CONTROLLER JOHN SKELTON WILLIAMS IS CLOSELY ASSOCIATED WITH MR. M'ADOO IN TREASURY BUSINESS AND RAILROAD FINANCE

Penalties Inevitable
Last month two or more submarines were operating along the American coast, and a number of steamships and sailing vessels were destroyed by them. Such attempts were to be expected from time to time, and there is no way of entirely avoiding losses. The navy is rapidly working out its program of large

seaplanes, which it is building for itself independently of the Aircraft Production Board that is trying to supply the army. A remarkable new device for pursuing submarines is the so-called "blimp," which is a combination of a small dir-

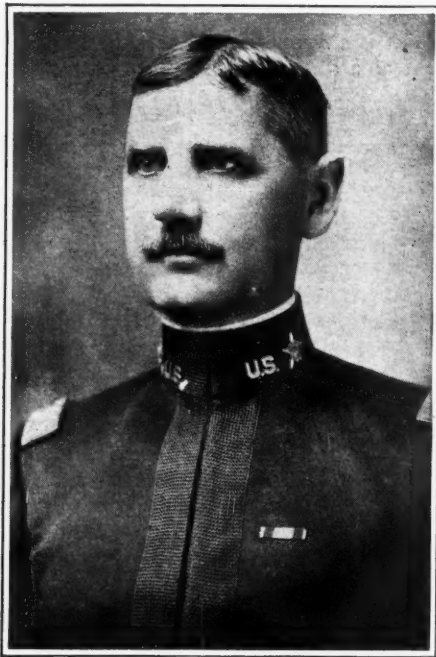


SECRETARY LANSING, OF THE STATE DEPARTMENT
(Who has returned to Washington after a well-earned vacation)

igible balloon and an airplane minus its wings. With the fuselage, engine, and propeller of the airplane suspended from the gas-inflated bag there is certainty of speed and direction; and the device can be halted above the submarine to permit accuracy in the dropping of bombs. Thus the submarine campaign is doomed to failure as a war measure. Its criminality grows no less with the passage of time, and Germany's career in the rôle of maritime assassin cannot be condoned. Whatever might have seemed possible a year or two ago, Germany's chances of resuming a large and recognized place in the ocean commerce of the world are steadily growing less. Such methods as she has pursued are not to be forgotten or ignored. For the ruling group is not wholly to blame, inasmuch as Germany—as an educated nation—acquiesced in the use of foul means, on the promise of a success that would enable her to escape the deserved punishment that must accompany failure. There can be no escape from dire penalties.

*Our Men
in
Siberia*

With American troops landing on the Siberian coast, to join the Japanese and other Allies in helping to reinforce the Czecho-Slovaks and give succor and aid to the honest and sane people of Russia, we get a new sense of the world-wide range of the war. We may not send large forces, but our men are carrying



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MAJOR-GENERAL WILLIAM S. GRAVES
(Appointed to command American forces in Siberia)

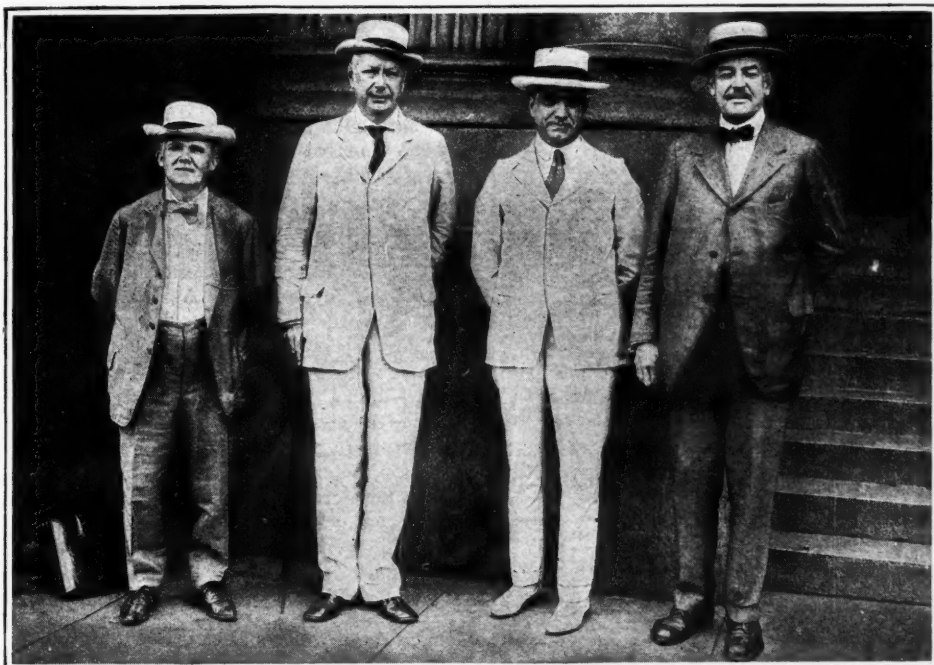
to Vladivostok the same qualities of pluck and vim that they have carried to France; and our officers across the Pacific will have the same high quality. Thus it was reported last month that chief in command would be Major-General William S. Graves, who had not long ago been an important member of the Army General Staff at Washington and more recently in command of the Eighth Division at Camp Fremont, California. General Graves is said to possess diplomatic and political as well as military fitness for a position that must require the greatest measure of tact in view of the kaleidoscopic conditions existing in an empire covering so large a portion of the habitable globe. Upon the whole, the tide seems to be turning in Russia, but it will be wise not to expect too swift a recovery. Meanwhile, the anti-German elements in Russia seem to be emerging.

*Ordaining
Victory*

In further statements to the Military Committee of the Senate, on Monday, August 19, Secretary Baker, General March, and General Crowder were gratifyingly frank and explicit regarding the great measure for extension of the draft that Congress was about to consider and was undoubtedly prepared to adopt. It was stated that this country preferred to make an overwhelming war effort, with practical certainty that the Germans would be beaten in 1919. It was explained that the boys under nineteen years of age would be put in a deferred class. Secretary Baker was clear and unmistakable in his statements regarding the intention of the Government to see that men who were not called to serve in the Army should be held to their industrial duties. They are still bothered in England by strikes in munition works and other essential industries. In this country we have a more logical and thoroughgoing system. The President of the United States will see that labor has no unredressed grievances, whether as to wages or conditions of employment. And the President, in his capacity as commander-in-chief, will also see that men are put into the Army if they are not well occupied outside of it. There is no need for the trade unions to be sensitive regarding this aspect of the draft laws, because, as a rule, the organized labor groups are working to good advantage. The "work or fight" system will have its chief application to large numbers of men, some of them possessing ample means, who ought in these times to be doing hard work of a useful kind.

*The Method
of Real
Economizing*

An overwhelming use just now of all the resources of the country will prove the most economical way to end the war and thus ultimately to save resources. In the three weeks from September 28 to October 19, there is to be a campaign for the placing of the Fourth Liberty Loan. Secretary McAdoo hopes to have this effort produce at least \$5,000,000,000. In subscribing for the new loan the country will have its chance to endorse the great Government program of winning the war by an incomparable development of irresistible military strength. In our opinion, it would be wiser just now to propose a somewhat larger loan, and a somewhat smaller tax levy, than is contemplated in the legislation now under discussion, the main features of which we are setting forth in subsequent paragraphs. The heavy taxes will



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DIRECTOR-GENERAL BURLESON AND OFFICIALS IN CHARGE OF THE TELEGRAPH AND TELEPHONE SERVICE

(Under the new arrangements for Government control and operation of the telegraph and telephone systems of the country, the Postmaster-General, Hon. Albert S. Burleson, is director-general—just as Secretary McAdoo is director-general of the railroads. In the group above, Mr. Burleson is the second from the left. On the extreme left is Hon. David J. Lewis, a member of the Federal Trade Board and formerly in Congress from Maryland, who has given the wire service much study. Third in the group is Assistant Postmaster-General Koons, and on the right is Hon. William H. Lamar, Solicitor of the Post-Office Department)

naturally curtail the ability of many people of large means to subscribe for bonds. On the other hand, the prevailing high wages should make bond-holders out of several millions besides those who subscribed for the third loan. Advances in wages for telegraph operators have come as an early step in Government control. Mr. Burleson proposes to effect saving through close cooperation between the post-office and the wire services. Mr. McAdoo is working for a large use of water power to save both the direct use of coal by railroads and also the transporting of coal for other consumers.

**War Profit
and Normal
Profits**

On August 14 Secretary McAdoo appeared before the House Committee of Ways and Means to argue against an increase in the present so-called excess profits tax. Mr. Kitchen's committee had progressed so far in its construction of a new revenue bill to raise \$8,000,000,000 as to provide, over and above many new taxes, for a new and distinctive war profits tax and for heavy increases in the

rates of the old excess-profits schedule, in which the tax is assessed on the basis of the percentage of profits to capital, and by which many businesses that have suffered seriously from the war, instead of gaining by it, are heavily mulcted. Mr. McAdoo made an eloquent and logical arraignment of this excess-profits device. It "exempts capital and burdens brains, ability, and energy," said the Secretary. "Furthermore, the excess-profits tax falls less heavily on big business than on small business, because big business is usually overcapitalized and small businesses are often under-capitalized." He showed the Committee in detail how the impact of increased rates would in this schedule affect particular typical concerns; and pointed out, as this magazine has for more than a year been pointing out, the essential justice, propriety, and practicality of the tax on profits brought by the war, which is not only clear in theory but has been proved by its actual operation throughout the war in Great Britain to be as successful and satisfactory as taxes can well be made to be.



HON. CLAUDE KITCHIN, OF NORTH CAROLINA

(Mr. Kitchin, as chairman of the Ways and Means Committee of the House of Representatives, has been taking the lead in formulating the largest tax measure in the history of the world)

*Why Keep
a Bad
Tax?*

The Ways and Means Committee had already provided for a tax on war profits to be superimposed on the excess-profits schedule after the rates of the latter were greatly increased, the two devices to be alternative with each corporation, which would be forced to use that one which made it pay more. The Secretary of the Treasury was so entirely convincing in his condemnation of the excess-profits alternative that his final exhortation to use it, though without increased rates and in combination with the war-profits plan, comes as an anti-climax. If it is, as he claims and as nearly all business men and economists also claim, an inequitable impost, the uneven impact of which is particularly unfortunate, it is difficult to see why it should not simply be dropped in favor of a heavier draft on the profits which are traceable directly to the gigantic Government orders and to the general business of making war. Aside from this bone of contention, the prominent features of the new revenue bill in its present construction stage are very heavily increased rates on personal incomes, a great variety of

"luxury taxes" on clothing and other articles for personal use above certain specified figures of cost, very heavy rates on manufacturers and consumers of tobacco, and at least a doubling of the taxes on liquors provided Congress does not vote for war-time prohibition.

*Personal
Income to
Yield More*

The personal-income-tax schedule calls for supertaxes up to 75 per cent. on the largest incomes. The temper of Americans is probably now as favorable to giving up money, or anything else, to wage the war, as human nature is ever capable of. Money means as little—and the fighting of the war means as much—as could possibly be hoped for by a Government entrusted with the task of calling for material sacrifices and with beating back the Germans. There is, however, such a thing as going too fast in calling for sacrifices in any particular field—of going so fast that there will be, if the need continues next year or year after next, not so much to sacrifice as there should be. This question is raised by the extraordinary suddenness of the increases in our rates of war taxes. In important schedules we have gone in little more than a year as far as Great Britain has gone in four years, in the effort to raise an unheard-of proportion of our war money through taxes rather than through sales of bonds. It is the essence of scientific nursing of the resources of economic sacrifice that transitions should be as gradual as possible. A man with an income of \$1,000,000 a year does not use it all for living expenses. The larger part is generally employed in productive industry, and very often indeed is counted on far in advance for such use.

*Danger of Tax-
ing Productive
Capital*

To take away very suddenly all of it, or nearly all of it, except what is used for family expenses is to run the danger of hampering the productive processes which were depending on it; so that it might be, with a drawn-out war, increasingly difficult to find sources of revenue. Russia's present economic chaos is an instance, if a highly exaggerated one. Eight billion dollars may prove to be a scientifically correct total for this year's federal taxes. But the sum was arrived at in a very round and rapid guess that America could and should raise one-third of the total war revenue in this way. It is difficult to see why, if there is final magic in this ratio of one-third, the suddenness of the war-swoop on

large incomes should not have been mitigated, for instance, by substantial taxes on coffee, tea, and sugar, which would have raised very large sums indeed without any tendency to restrict industrial activity and without any appreciable effect of privation. Proposals to levy such taxes were made during the framing of the great revenue bill, but present appearances are that the assumed unpopularity of attacking the people's breakfast table will count as a final argument against them.

*The
Mounting War
Cost*

A comparison of the reports of our Treasury Department with recently issued British financial statements shows that America is already spending 50 per cent. more than Great Britain on the war. The war outgo for July was \$1,508,000,000, or more than \$2,000,000 each hour. Thus we have come to a yearly rate of \$18,000,000,000; but each month shows an increase over preceding months, and the year 1919 is expected to need \$24,000,000,000, not counting between five and six billion dollars that will be appropriated for that year but covered by future contracts. Although we are going so much faster than Great Britain, and at a constantly accelerated rate, our total war debt is as yet only about one-third as large as Great Britain's, owing to America's shorter period of war effort—\$12,500,000,000 against \$36,600,000,000. In the current year we have raised about \$4,000,000,000 in taxes as compared with \$3,270,000,000 levied by Great Britain. With a population here twice as great as our Ally's, we should, to make the individual burden of taxation as great as the Englishman's, raise eight billion dollars—just the sum we propose to raise next year. It must be remembered, however, that England came to this present burden by gradual increments over four years, while we will have jumped to it in less than half the time.

*A Drop
in Export
Trade*

For the fiscal year 1918 our export trade fell off \$362,000,000 from the preceding year—a total decrease which is more than accounted for by the single item of the disappearance of Russia as a purchaser of our goods. The complete cessation of trade with Russia made a difference of more than \$407,000,000 in the year's figures. Other remarkable features of the past year's export figures are the drop in shipments to the Scandinavian countries and

the Netherlands from \$292,000,000 to \$45,000,000 and an increase of 100 per cent. in our exports to Japan. In the case of Denmark there was almost as complete a cessation of business as with Russia, due to the drastic steps we have taken to prevent our goods from reaching Germany through the medium of Danish, Dutch, Norwegian, and Swedish merchants. Warring Europe as a whole accounted for a decrease for the year of no less than \$586,000,000 of export trade from America, partly made up by heavy increases to Japan, Italy, and other countries. The huge excess of export values over imports for the entire period of the war has resulted in an increase of gold in the United States of no less than \$1,078,383,000, bringing our total stock of gold, on August 1, up to more than three billion dollars. About 65 per cent. of this is held in the vaults of the Federal Reserve banks, where it can do its most efficient work in supplying credit and currency.

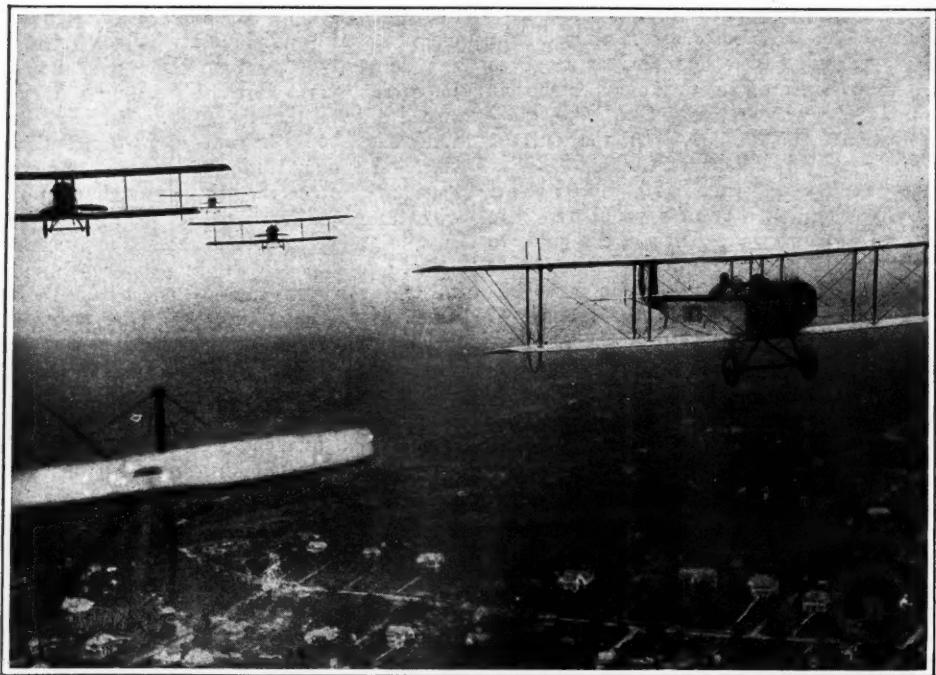
*Save
Paper!*

The War Industries Board has found it necessary not only to save part of the paper now used in printing newspapers and other periodicals, but to embark on a vigorous campaign of education with individuals, who, collectively, can do vastly more than publishers in this important war effort. On August 5 the Board ordered that newspapers published on week days should be reduced 15 per cent. in size, and Sunday editions 20 per cent. Americans have formed the habit, through a period of extraordinarily cheap and plentiful paper supplies, of being utterly careless and wasteful of a product that requires in its manufacture great quantities of coal and tens of thousands of laborers; and after the paper is made it forms a considerable item in the total demand for transportation facilities. These are three things—coal, labor, transportation facilities—that count most heavily in essential war industries; and waste of them, direct or indirect, cannot be tolerated during the war strain. Furthermore, several of the chemicals used in the manufacture of paper are needed for munitions making. Every individual and every household is called on to remember that a continuing waste of paper is by just so much hampering our waging of the war; it is important, too, to save old papers and magazines and sell them for return to the factories, and to economize whenever practicable in the use of wrapping papers.



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SIXTEEN AMERICAN MACHINES MANEUVERING IN SQUADRON FORMATION



© Committee on Public Information

FLYING OVER KELLY FIELD, NEAR SAN ANTONIO, TEXAS

FAMILIAR SCENES NEAR AMERICAN AVIATION CAMPS

RECORD OF EVENTS IN THE WAR

(From July 19 to August 20, 1918)

The Last Part of July

July 19.—Honduras declares war against Germany on the ground of necessary solidarity among the states of America in the cause of civilization and right.

July 20.—The French official report announces that the entire south bank of the Marne has been cleared of Germans.

The great transatlantic liner *Justicia*, operating as a British transport, but returning westward without troops, is sunk off the coast of Ireland after an eighteen-hour battle with a submarine.

It is learned that ex-Czar Nicholas Romanoff, deposed by the Russian revolutionists in March, 1917, was put to death by the Ural Regional Council at Yekaterinburg on July 16 because of an alleged conspiracy to release him.

July 21.—French troops enter Chateau-Thierry, the principal town in the salient under attack by French and American troops; the French cross the Marne in pursuit of the Germans.

A German submarine sinks a tug and three barges off the Massachusetts coast after an attack lasting an hour and a half.

July 23.—Transport of American troops during July, the British House of Commons is informed, is at the rate of 300,000 a month, two-thirds of whom go over in British ships.

July 25.—Baron von Hussarek, former Minister of Education, is appointed Premier of Austria, succeeding von Seydler.

July 27.—The German retreat from the Marne becomes more pronounced, and the Allies reach a point ten miles from their line of July 18.

American troops arrive on the Italian front.

July 28.—French and American troops enter Fere-en-Tardenois, the German supply base for the Marne salient.

An official German communication denies rumors of Field-Marshal von Hindenburg's death or illness.

July 29.—The State Department approves a proposal from American bankers for a loan to China and expresses the hope that British, Japanese, and French bankers will join.

Nicolai Lenin, head of the Russian Bolshevik government, declares informally that a state of war exists between Russia and the Allies.

July 30.—The German commander in the Ukrainian Republic, Field-Marshal von Eichhorn, is assassinated by a Russian at Kiev.

Ratifications of the draft treaty between Great Britain and the United States are exchanged at London, and the period of sixty days' grace for voluntary enlistment begins.

July 31.—Ukraine and Rumania reach an agreement, it is reported through Denmark, by which the Russian province of Bessarabia will belong to Rumania in exchange for commercial concessions.

The First Week of August

August 1.—The Chancellor of the British Exchequer asks the House of Commons for a new vote of credit of \$3,500,000,000, the largest in history, to carry the war to the end of October.

August 2.—The French capture Soissons, at the northwestern end of the German salient under attack; the German retreat continues.

Allied troops, including Americans, are landed at Archangel, the northern Russian port.

August 3.—The State Department at Washington announces its plan for aid to the responsible government in Siberia; a few thousand American troops (in cooperation with a small force of Japanese, French, and British) will be sent immediately to Vladivostok to assist Czecho-Slovaks and other Russian elements in the movement for self-government; economic and educational help will also be offered.

The British ambulance transport *Warilda* is torpedoed at night in the English Channel and sinks; more than 120 wounded soldiers and several members of the crew are killed by the explosion.

August 4.—American troops enter Fismes, the second and last of the German bases in the salient under attack.

The Germans retreat across the Vesle River, and the great salient in their line between Soissons and Rheims is completely abolished—an Allied gain of 25 miles.

August 5.—General Foch, commander-in-chief of the Allied forces, is made a Marshal of France.

Louis J. Malvy, Minister of the Interior in France under three war Premiers, is found guilty of communicating with the enemy and is sentenced to five years' exile.

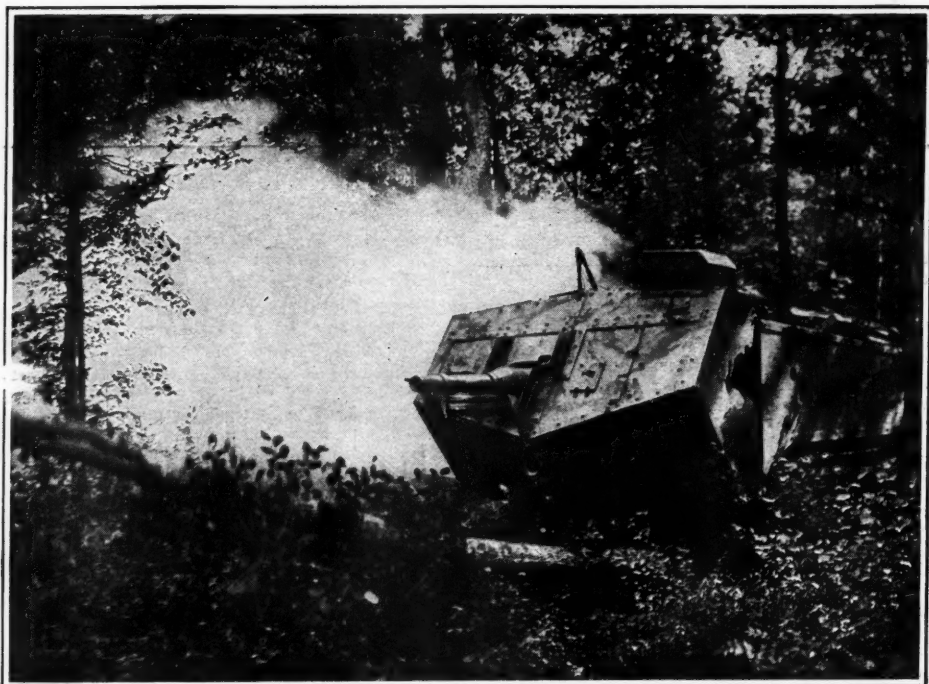
The United States Consul-General at Moscow, the Bolshevik capital of Russia, places American interests in the hands of the Swedish Consul.

August 7.—Premier Lloyd George, in the House of Commons, reviews England's participation in the war—increasing the largest navy in the world from a tonnage of 2,500,000 to 8,000,000 (including auxiliaries); expanding the smallest army by recruiting 6,250,000, besides 1,000,000 from the Dominions and 1,250,000 from India; destroying more than 150 German submarines, and making the seas safe for troops and trade.

A German submarine sinks a lightship anchored off Cape Hatteras, N. C., while another one operates off the Canadian coast.

The Second Week of August

August 8.—A new Allied drive is begun against the German salient near Amiens, to the northwest of the one just abolished; the attacking troops are French, British, and American, under command of Field-Marshal Haig, and they move forward seven miles the first day.



A BRITISH "TANK" OF NEW DESIGN, FORCING ITS WAY THROUGH A FOREST IN PICARDY

(All reports describing the great gains made by Allied troops in the first day or two of an offensive give chief credit to these armored-and-armed automobile tractors. Their design has been vastly improved within the past few months, and the new machines move much more rapidly than earlier models)

August 9.—A squadron of Italian airplanes under Gabrielle d'Annunzio makes a 650-mile trip to Vienna and back, across the Alps, dropping manifestoes on the Austrian capital.

August 10.—The Allies make notable progress in the attack near Amiens, the French capturing Montdidier; a total advance of fourteen miles is made in three days, and 24,000 prisoners taken.

August 12.—The Mexican Government modifies the decree inflicting excessive taxation on foreign oil interests, and ultimate adjustment seems likely.

August 13.—The British Government issues a declaration formally recognizing the Czechoslovaks of northern Austria and Hungary as a nation, and the three Czechoslovak forces in France, Italy, and Russia as an Allied army.

August 14.—The Mexican Government replies to a British protest against the oil decree of February 22—claimed to be confiscatory of foreign oil claims through over-taxation—and declares that the matter is purely one of domestic finance.

The Third Week of August

August 15.—American troops from the Philippines land at Vladivostok to cooperate with Japanese, British, French, Italians, and Chinese under a Japanese commander, General Otani.

The Allied expedition landed at Archangel, Russia, on August 2, reaches a point 100 miles south on the railroad toward Vologda.

It is announced that a British force has completed a 700-mile march from Bagdad to Baku,

the oil port in the southern Caucasus where Armenians and Russians friendly to the Allies are fighting the Turks for supremacy.

Captures of German prisoners in the battle begun on August 8 are officially stated to be 30,000.

Vice-Admiral Behncke becomes Minister of Marine in Germany, succeeding Admiral von Capelle, who served since March, 1916.

August 16.—It is announced at Washington that the first American air squadron—eighteen American-built machines, equipped with "Liberty" motors, and piloted by American aviators—has successfully completed an air raid behind the German lines.

It is learned that a British force from India has reached Turkestan, in southern Asiatic Russia after passing through Beluchistan and Persia, to cooperate with local elements fighting the Bolsheviks.

August 17.—General March, Chief of Staff of the United States Army, makes public the fact that 1,450,000 American soldiers are in France, Italy, and Russia, and 1,550,000 others in home training camps.

The Japanese Government takes over the supply of rice after several days of food rioting.

August 18.—The War Department states that machine guns for the American army are being produced at the rate of 6,000 weekly.

August 18-20.—The British gain several miles in the Lys salient, the Germans retiring rapidly.

August 19.—The French gain considerable ground west and south of Noyon.

RECORD OF OTHER EVENTS

(From July 20 to August 20, 1918)

PROCEEDINGS IN CONGRESS

August 5.—In both branches the Administration's Man-Power bill is introduced, amending the Selective Draft act of May, 1917, by extending the age limits to include men from 18 to 45 years, inclusive, instead of 21 to 30.

August 14.—The House Committee on Ways and Means, framing a new revenue bill, is urged by the Secretary of the Treasury to tax war profits 80 per cent.

August 19.—The Senate reassembles, after a virtual recess since July 14, and the Committee on Military Affairs submits the Administration's Man-Power bill, which plans for an army of 3,200,000 in France by June, 1919.

The House reassembles and begins consideration of the Man-Power bill; General March, Chief of Staff, informs the Committee on Military Affairs that the war can be ended by 1919 with the army furnished by the new draft proposal.

August 20.—The House Committee on Military Affairs hears objections by the Federation of Labor to the provision in the Man-Power bill, which would, in effect, put in the army men "absent from work without cause."

AMERICAN POLITICS AND GOVERNMENT

July 22.—Colonel Roosevelt declines to become a candidate for the Republican nomination for Governor of New York on the ground that war problems absorb his whole being.

July 23.—The President, acting under recent legislation, directs that all telephone and telegraph systems shall come under government control at midnight on July 31.

July 27.—In the Texas Democratic primary Governor William P. Hobby is renominated.

July 31.—The War Department announces its plan for extending age limits for compulsory military service; legislation will be immediately offered in Congress applicable to men from 18 to 45 years, inclusive.

August 4.—The Government's suit against the International Harvester Company—the harvester "trust"—pending since 1912, is ended by the company agreeing to certain measures of dissolution within one year after the end of the war.

August 6.—In the Kansas primaries United States Senator Thompson (Dem.) is renominated, with Governor Capper for his Republican opponent; for the Governorship, Henry J. Allen (Rep.) and W. C. Lansdon (Dem.) are nominated.

In the Missouri primary United States Senator Willfley (Dem.) is defeated for renomination by ex-Governor Joseph W. Folk; Seldon P. Spencer wins the Republican nomination.

In the Oklahoma Democratic primary United States Senator Owen is renominated and Judge J. B. Robertson chosen as candidate for Governor.

In the West Virginia Democratic primary Clar-

ence W. Watson is chosen as candidate for United States Senator.

August 8.—The Federal Trade Commission recommends that the Government acquire and operate the stock yards and the facilities for transporting and storing live stock and dressed meat, alleging monopoly and profiteering.

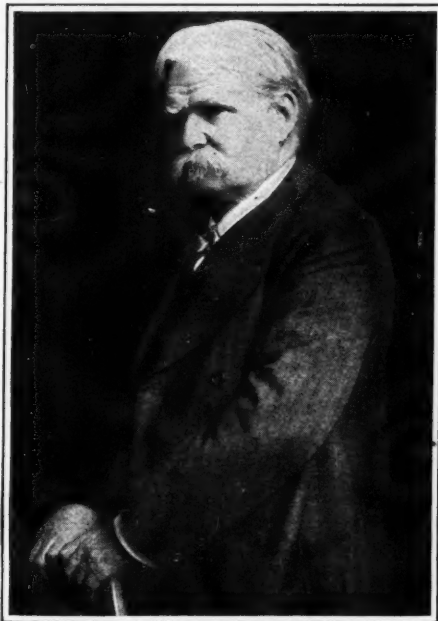
The Louisiana House ratifies the prohibition amendment to the Federal Constitution, following similar action in the Senate.

August 9.—The War Industries Board recommends that manufacturers of pleasure automobiles undertake 100 per cent war work not later than January 1.

August 11.—The President warns those engaged in coal mining that the existing scarcity of coal is the most serious danger confronting the country, and calls for prompt and vigorous action on the part of both operators and miners.

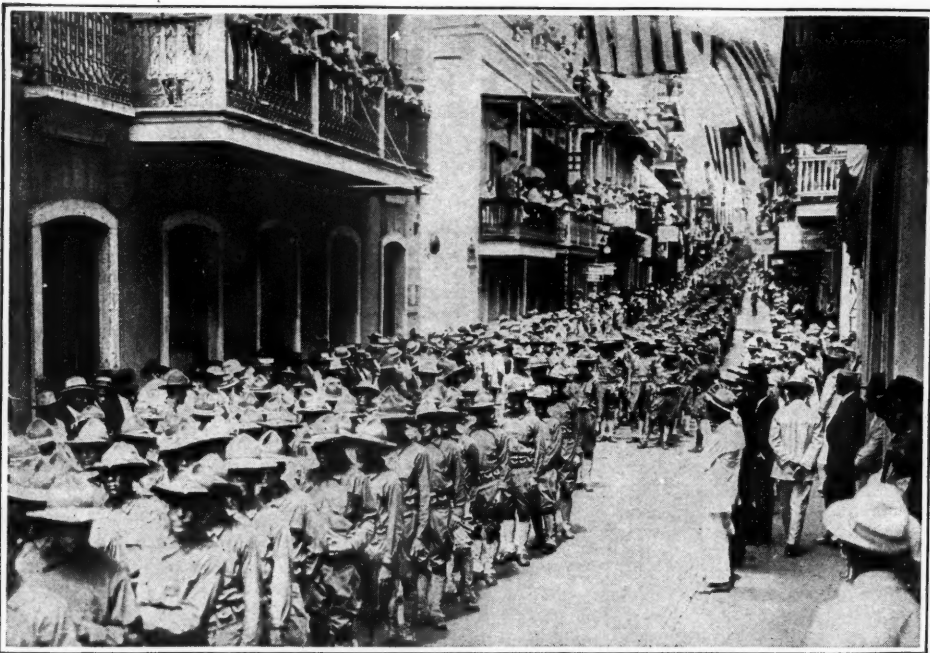
August 13.—In the Ohio primaries Governor Cox (Dem.) is renominated and ex-Governor Willis is chosen by the Republicans.

In the Alabama Democratic primary United States Senator Bankhead is renominated.



HENRY WATTERSON

(Colonel Watterson retires from the editorship of the Louisville Courier-Journal after fifty years of brilliant service. He is the sole survivor of a distinguished group of American newspaper editors, including Murat Halstead, Whitelaw Reid, Charles A. Dana, and Edwin L. Godkin, all of whom were active during and after the Civil War)



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PORTO RICAN SOLDIERS IN THE AMERICAN ARMY MARCHING THROUGH THE STREETS OF SAN JUAN

(The writer of the brief article on page 286 of this number of the REVIEW, tells us that the little island in the West Indies is furnishing 28,000 soldiers)

OTHER OCCURRENCES OF THE MONTH

August 4.—The 12,000-ton cargo carrier *Invincible* is launched at Alameda, Cal., having been constructed in twenty-four working days—a new world's record.

August 5.—Mrs. Woodrow Wilson christens the first ship launched at the Hog Island yard, near Philadelphia, where fifty merchant vessels are being constructed for the Government.

August 7.—High temperatures prevail throughout the East and Middle West; at New York the thermometer reaches 102, the hottest ever recorded; at Philadelphia the temperature is 106.

August 8.—The Government's crop report shows falling off during July, but continued prospects for record production of foodstuffs.

OBITUARY

July 16.—Nicholas Romanoff, Czar of Russia from November, 1894, until the revolution of March, 1917, 50.

July 21.—Arno W. King, Associate Justice of the Maine Supreme Court, 63.

July 23.—Dr. Joseph Henry Gilmore, professor of English for many years at Rochester University, and author of the hymn, "He Leadeth Me," 83.

July 25.—Prof. Walter Rauschenbusch, authority on church history and interpreter of modern social Christianity, 56 (see page 318). . . . James Craig Nicoll, a well-known painter in water colors and oil, 70.

July 27.—Gustav Kobbe, a widely known art and music critic of New York, 61.

July 29.—Charles Henry Hart, an authority on American portraiture, 70.

July 31.—Prof. Henry Shaler Williams, of Cornell University, a distinguished geologist, 71.

August 1.—Sergeant Joyce Kilmer, poet and literary critic, 31.

August 2.—Richard Norton, archaeologist and head of the American volunteer ambulance corps in France during the first three years of war, 46.

August 6.—James H. Davidson, Representative in Congress from Wisconsin, 59.

August 8.—Max Rosenthal, a veteran American illustrator, 85.

August 9.—John D. Shoop, Superintendent of Schools in Chicago since 1915, 61.

August 10.—William H. Newman, former president of the New York Central Railroad system, 70.

August 12.—Dr. Luther Halsey Gulick, head of the Camp Fire Girls and an authority on hygiene and physical training, 63. . . . Anna Held, the actress, 45.

August 14.—Edward H. Gillette, former Representative in Congress from Iowa.

August 15.—Albert Metin, French Minister of Blockade and former Minister of Labor, 49.

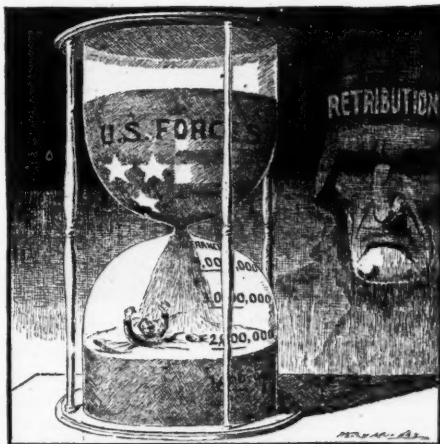
August 17.—Jacob H. Gallinger, United States Senator from New Hampshire since 1891 and Republican leader of the upper chamber, 81.

August 19.—George H. Prouty, Governor of Vermont 1908-1910, 56.

CARTOONS OF THE TURNING TIDE



THE SPIRIT OF 18 TO 45
From the *News* (Dallas, Texas)



THE SANDS OF DOOM
From the *Herald and Examiner* (Chicago)



THE STRONGER WE GO, THE SOONER THE END
From the *Daily News* (Dayton, Ohio)

THE big, momentous fact in the past month of war—full of hope for the Allies, of grim portent for Germany—was the



YES, IT'S UNCLE SAM—BUT NOT AS THEY HAD PICTURED HIM

From the *Herald* (New York)



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THE AURORA BOREALIS!
From the *Evening World* (New York)

growth in size and might of the American army in France. The fighting in June and July had tested the metal of our troops and strengthened the resolve of our Government and people to prepare for a blow in 1919 that shall end the war. Never was the nation so confident of success as at this moment. The reception of the Administration's "Eighteen-to-Forty-five" draft proposal was evidence that the country is heartily behind



HIS PROTEST AGAINST A GERMAN PEACE
From the *News* (Dallas, Texas)

the President in every measure that will build up an army of overwhelming power to crush German militarism. It is "force to the utmost" from now on.

America is bringing new cheer to the submerged peoples of Europe. Even Russia, the sick bear, sees for the first time, according to John Cassel, of the *New York Evening World*, a new arrangement of "northern lights" in the sky taking on the form of the

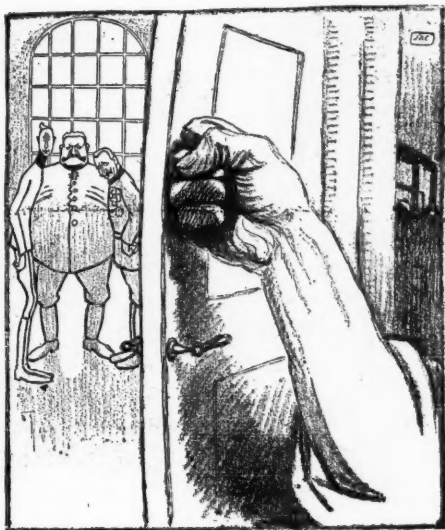


© John T. McCutcheon

THE PROBLEM OF HELPING THE SICK BEAR
From the *Daily Tribune* (Chicago)



IS HE AN ASSET OR A LIABILITY?
From the *Herald* (New York)



THE KNOCK ON THE DOOR

HINDENBURG: Don't be disturbed, gentlemen! In this country all revolutions have long been absolutely forbidden!

From *Söndags-Nisse* (Stockholm, Sweden)

Stars and Stripes. Other cartoons on the preceding page represent the bear as a puzzle and a menace to Germany—a decidedly questionable asset. On this page the cartoonists depict Germany's internal troubles.

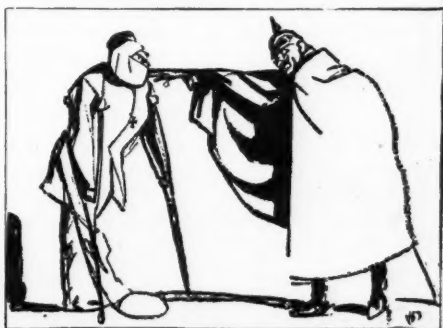


"AREN'T YOU A FINE PAIR OF WATCH-DOGS!"

From the *News* (Dayton, Ohio)



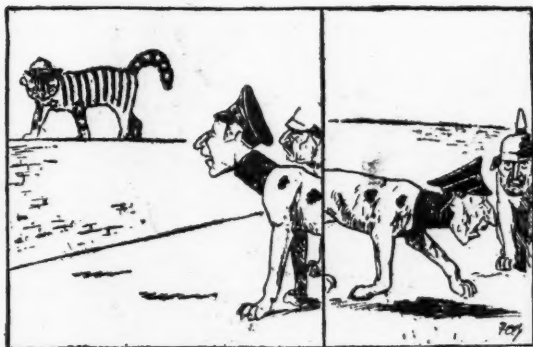
THE OLD GAME OF "PASSING THE BUCK"
From the *News* (Detroit, Mich.)



ENCOURAGEMENT

"Hasten and get well, Fritz, we have still to make Paris, London, Rome and New York."

From *La Victoire* (Paris)



THE WRONG TOM-CAT

THE PUP: "There's a new Tom-cat, father; see me go for him!"

FATHER: "What's the matter?"

THE PUP: "It was the wrong Tom-cat, father!"

From the *Westminster Gazette* (London)



HUN TO HUN

ATTILA (to the German Crown Prince): "Speaking as one barbarian to another, I don't recommend this neighborhood. I found it a bit unhealthy myself."

From *Punch* (London)

The London cartoonists continue to poke British fun at the All-Highest and his satellites. The Allied victories have served to put "pep" into *Punch*, so to speak.



A HAPPY PROSPECT FOR AUSTRIA'S EMPEROR

From the *Passing Show* (London)



CHARLIE'S NIGHTMARE

(An Italian conception of the Austrian Emperor's state of mind)

From *L'Asino* (Rome)



(Count Hertling has announced that Germany does not propose to keep Belgium, but only to use it as a pawn in peace negotiations.)

GAMEKEEPER BULL: "What are you doing with that hare?"

WILHELM THE POACHER: "Nothing. I only shot it to offer to you as a bribe in case you caught me."

From *Opinion* (London)



STICKING TOGETHER

(Will the King of Bulgaria, or the Emperor of Austria, be the first to slide off?)

From the *Evening Telegram* (New York)



THE SLUMP IN MITTEL-EUROPA STOCK

FERDY OF BULGARIA: "War is still business, but dat lot don't declare no dividend. I wonder if the Entente would like to buy a nice ally?"

From the *Passing Show* (London)



TROUBLES OF NEUTRALITY

HOLLAND IN THE TWILIGHT: Miss, stick to the path, or otherwise you will "get landed in the bog."

From *De Amsterdammer* (Amsterdam)

VICTORY AND THE TURN OF THE TIDE

BY FRANK H. SIMONDS

I. THE SECOND MARNE

IN the four weeks which have passed since I closed my last article the whole face of the war has changed. The successful July battle of arrest at the Marne, in all larger respects closely paralleling the immortal struggle of September, 1914, definitively wrecked all the grandiose strategy of Ludendorff and left the Germans, already deprived of the initiative, in positions vulnerable in the extreme and held in the presence of an enemy at last possessing the numbers necessary to pass to the offensive and now by the Marne victory relieved of all apprehension as to his opponent's strategical advantage.

What has happened in August has been the natural and logical consequence of the July triumph. In five successive offensives the German had exhausted his reserves and his resources. He had intended his latest offensive, that between the Argonne and Soissons, to be decisive. He had put into it more men and more material than he had used in any but his first drive of March 21. He had, in the face of rapidly growing American contingents, waited not less than forty days to refit his own troops and amass that reserve of guns and munitions in the sectors marked for his new attack, which he deemed necessary for victory.

Clemenceau has been accustomed to say that victory in this war would belong to the side which was able to endure to the last quarter of an hour. In a very real sense the four days following Bastille Day, last July, were the final quarter of an hour. All depended upon whether the French Fourth Army between Rheims and the Argonne would be able to endure the terrific blow launched against it. Could it do this, then Foch had prepared between Soissons and Château Thierry the great counter-thrust which was to destroy Ludendorff's whole campaign.

We saw last month that Gouraud's army

performed its mission perfectly, we saw that, employing a new method, a method consisting of organization in depth and voluntary retreat from lightly held front lines, the Fourth French Army was able to break the German sweep on its own battle positions and thereafter hold the foe without difficulty. After two days the failure on this half of the field was unmistakable and the Germans broke off the engagement. They had used fifteen divisions and held ten more in reserve for the advance after victory, which never came. They had counted on reaching Châlons, but they never passed Souain and the old familiar front of the Battle of Champagne of 1915.

Still, as gamblers will, Ludendorff thereafter sought in the Marne salient at least a local triumph and the reduction of the Rheims position. His troops had passed the Marne and, turning their backs to the Franco-American forces between Château Thierry and the Aisne near Fontenoy, moved against Epernay, advancing astride of the Marne. In the same fashion Kluck's troops had turned their backs to Paris in September, 1914, and the result was the same. The counter-attack of July 18 involved the Germans in exactly the same tangle which had enmeshed Kluck, compelled an immediate retreat north of the Marne, and an eventual retirement behind the Aisne and the Vesle.

When I closed my last article the meaning of the Allied victory was already plain; the extent of the German retreat was alone a matter of doubt, although it was fairly obvious that this retreat must go to the Vesle and might go to the Aisne. As it happened, the halt came at the Vesle, but the fighting after July 20, when Ludendorff had arrived at his inevitable decision to retire and surrender his own plans of the summer, was nothing more than the fighting incident to a skilful, deliberate, and orderly retirement of a huge army from a position in which it was no longer possible for it to remain, but out

of which it was, as yet, perfectly feasible to retreat.

This retreat was conducted in familiar stages. It was essential to remove the vast store of guns and munitions collected in the salient, and to do this required time. Such losses as the Germans suffered after July 20 were in the main losses in material rather than prisoners or artillery. These were grave; they represented a permanent crippling of the Germans for many weeks in this direction, but beyond this there was no booty left to the Allies, whose great captures in prisoners and guns were over by Sunday, July 20, three days after Mangin had delivered the decisive thrust toward Soissons and cut the Soissons-Château Thierry highway and railway, which were the main transport lines of the Germans in the whole salient.

II. CONSEQUENCES

It was not until two weeks later, on Sunday, August 4, that the official reports at last announced that the German army was safely behind the Vesle and the Aisne and narrated the rapidity of the final stage of the withdrawal. In the previous two weeks there had been very widespread expectation of a new Sedan and a capture of the armies of the Crown Prince. Yet at no time after July 19 was there any such possibility. Precisely in the fashion in which Kluck had saved his imperiled flank at the Ourcq on September 6, 1914, Boehn had insured the safety of his flank, about Soissons, on July 19. Thereafter the problem was one of getting the material rather than the men out of the Marne salient.

All this phase of the Second Marne belongs really to the July narrative. The blow of July 18, continued on the 19th, but checked by the evening of that day, the blow which put Mangin above Soissons and across the Soissons-Château-Thierry line, decided the fate of the Second Battle of the Marne, or of that phase between Soissons and Rheims. Gouraud's victory east of Rheims had decided the earlier phase and insured the subsequent success, as Castelnau's success at Nancy in 1914 had made Joffre's counter-offensive at the Marne possible.

In July, Foch had not the men to give Mangin to make a Sedan possible. The armies of the two commanders were too evenly balanced for this, and all through the Marne fighting the Germans possessed

the larger numbers actually engaged, exactly as they had at the First Marne. They had made a blunder of incalculable magnitude in reckoning French reserves exhausted and American divisions unavailable and thus holding Foch incapable of launching any thrust at their right flank, exposed unmistakably to any thrust that might come eastward from the direction of Paris. The price of this blunder was the loss of a decisive battle and the sacrifice of their offensive campaign. But they had the reserves immediately available to halt Mangin before Soissons, to hold open the neck of the bottle between Soissons and Rheims until Boehn's army had escaped from it. This they did in a thoroughly workmanlike fashion. Their rear guards fought admirably and they ultimately arrived behind the Vesle and the Aisne without the loss of any considerable number of men or guns, after the first two days of the surprise, July 18 and 19.

Notwithstanding this fact, the consequences of the defeat were almost immeasurable. Thirty-five thousand prisoners and more than 700 guns were but a small fraction of the real loss. Four months after the launching of their great campaign to obtain a military decision they had been defeated, thrown back thirty miles, put on the defensive, and condemned to face a future in which they would no longer possess the advantage of numbers and were certain, with little delay, to be confronted by superior numbers, thanks to the rapidity of American intervention.

They had boasted that France had used up all of her reserves, but, despite the presence of nearly 200,000 Americans in the battle-line, at least 70 per cent. of the army engaged in the Second Battle of the Marne had been French. Relatively small as had been the American contingent, however, it had instantly revealed qualities which were a final answer to the sneers of German military writers directed at the tactical ability of the new enemy. Ludendorff could confess that the enemy had "cluded us" only to claim that a retreat to the Vesle had been a victorious strategic affair, but he could not disguise the fact that there had been a retreat following promptly upon the launching of the "peace storm," and the moral consequences of the disaster, for it was a disaster, could hardly be exaggerated, looking upon it either from the German or the Allied angle.

On the military side the great German offensive was broken in the Second Marne

by inferior forces and at a staggering cost to the assailant. The Allies had used smaller numbers, suffered infinitely smaller losses, taken thousands of prisoners and hundreds of guns. They had retaken upwards of 500 square miles of France, but the importance of the territory was out of proportion to its size. The Marne route to Paris had been closed and the Paris-Châlons-Nancy Railway reopened. The peril of a converging attack by the Oise and Marne Valleys was over, the Allied front had been restored to a straight line from Rheims to Soissons, and all but an insignificant fraction of the German gains in the great defeat of May 27 had been snatched from the victor. The situation had been thrown back to May, but two months more had passed and time was running steadily against the German.

III. BACK TO THE SOMME

So much for the Second Marne, one of the decisive victories of the war, strangely reminiscent of the First Marne in all that was of major importance. It was a new deliverance of France, a new salvation of Paris, and a second destruction of German strategy based upon the purpose to win a supreme victory by a colossal thrust at the principal enemy, the French Army. But the consequences of the Second Marne were bound to be more considerable, because the situation of the Allies was far different from their condition four years before. Then it was an exhausted French Army which snatched victory from defeat in a final moment of superhuman effort. Then the victors were incapable of rapid exploitation of the victory. It was otherwise now.

In March, Ludendorff had undertaken to crush the British as a preliminary to turning against the French and annihilating them. He had undertaken to separate French and British Armies in Picardy. He had subsequently sought by a second offensive in Flanders to complete the work of eliminating the British Army, although he had failed to separate it from the French. After April 29 he had turned south to deal with Pétain, satisfied that Haig was incapable of action for a period within which he could dispose of the French.

This was the Verdun idea all over again. It was the same gamble. Then, France was to be beaten at Verdun before Britain could get ready; now France was to be crushed about Paris before Britain could recover

from the disastrous defeats of March and April. But it was certain, now as in 1916, that if France were not disposed of before Britain was ready, the Germans, still lacking their decision, would have the British on their hands. In 1916, the British intervened at the Somme, four months after the attack began on the Meuse fortress. The British were now to intervene upon the Somme again, a full month more promptly than in the previous instance.

With the close of the March offensive Ludendorff occupied a position between the Oise and the Somme facing Amiens which was at once advantageous and perilous. It was an admirable jumping-off place, particularly after it had been somewhat extended by the June attack toward Compiègne, provided the Germans were able and chose to resume their operations beyond the Oise. It commanded the main French railroads to and through Amiens, the chief railroads from Havre to the British front, lines of utmost importance to the British. It was an ever-present threat of a future effort to separate the French and British or to resume the advance down the Oise Valley toward Paris, coördinating with a similar thrust down the Marne from Château Thierry.

On the other hand, the salient was unmistakably vulnerable to flank attack, either from the Oise upward or across the Avre and the Ancre, eastward. If the British should recover from the effects of their spring defeats before the Germans had finished with France, then nothing was more certain than that there would be an attack upon at least one side of the Amiens salient. Moreover, the circumstances of this salient closely resembled those of the Marne salient, although because of the nature of the country the Marne salient was far more defensible. A thrust outward from Amiens, like the thrust toward Soissons which won the Second Marne, would have equally great consequences and compel a rapid German retirement from Montdidier and the banks of the Avre to prevent envelopment and capture.

Once they had been defeated at the Marne, it was clear that the Germans felt the peril at the Somme. In the first days after the situation on the Vesle had stabilized itself there was a withdrawal from all the positions west of the Avre and the Ancre, an effort to gain security by putting these little streams between themselves and the foe. There were also signs that these retirements were but the preludes to far more

considerable retirements, although Ludendorff was palpably embarrassed by the fact that each withdrawal was a further confession to his own public that the campaign had been lost.

Already it was plain that any new advance upon Paris by the Marne Valley was out of the question. To confess by retreat between the Oise and the Somme that this avenue, too, was no longer available was to confess that the offensive campaign had failed and been abandoned. Therefore, like Napoleon in Eastern Germany in 1813, Ludendorff temporized and, like Napoleon, he was now to pay a price for permitting political considerations to weigh against military necessities.

IV. THE THIRD SOMME

On the morning of August 8, after the briefest of artillery preparation, the Fourth British Army, between Albert and the Luce Brook south of the Somme, suddenly launched a terrific thrust on the flank of the Amiens salient and across the lines of communication of the Germans. The chief circumstances of the attack were the completeness of the surprise and the degree to which the small, swift tanks, by replacing the artillery as a means of breaking the enemy obstacles, thus restored the element of surprise. The Third Somme was a natural and complete application of the lessons of Cambrai, which had already been utilized at the Second Marne.

All through Thursday, August 8, and Friday, August 9, the British advance was rapid and well-nigh irresistible. By Sunday Rawlinson's troops were close to the old Somme front of 1916, all the way from that river, straight down past Chaulnes to the outskirts of Roye, while the French had taken Montdidier and in a rapid advance had brought their First Army under General Debeny into line with the British from Roye southward. Nearly 30,000 prisoners and over 700 guns were the rewards of this brilliant and swift blow. The advance was over a dozen miles at the point of extreme penetration and over ten along a wide front.

But, on this Sunday we begin to see, once more, clear signs of the German reaction. The advance, which has been irresistible south of the Somme, has made little progress to the north, and the Germans still hold high ground on the flank of the British advance south of the river. Away to the south,

along the Oise, too, they held solidly the high ground in the triangle Noyon-Roye-Lassigny. From these two flanks they now threatened the British and French advance in the center. Moreover, this advance in the center has now encountered the Germans rallied in the surviving ruins of German and Allied trenches dug in the far-off time of the First Battle of the Somme.

And on this line by Monday, August 12, the battle begins to die down. Henceforth for a week it is little more than a gradual advance of the Allies until they hold their old Somme line from Lihons to Ribécourt, while the Germans on their part still cling to the trench systems which they defended in the former battle.

Toward the end of this week the Third French Army under Humbert, one of the heroes of the Marne, moves up along the Oise, seizes the greater part of the high ground about Lassigny, reoccupies Ribécourt, and in a general fashion conforms to the main advance, thus bringing the whole line from the Somme to the Oise back to the 1916 situation, solidly anchoring it on the high ground above Lassigny and putting a new barrier between the Germans and Paris on the Oise route.

As a battle the Third Somme was over by Monday, August 12. It had lasted five days, where the Second Marne lasted but three. It had resulted in a greater immediate gain of territory and it had pinched out the Montdidier salient far more promptly than the Marne salient was abolished. The Paris-Amiens-Boulogne Railway had been reopened. The capture of guns, and prisoners was about the same as at the Marne. The German retreat had been swifter because since only holding troops were engaged, there had not been the same congestion of men and material in this Somme salient, and the Germans were not caught there at the moment when they were carrying on an offensive of their own.

Such, very briefly, is the Third Battle of the Somme, confessed by the Germans to be their "first serious reverse of the war." In it some eleven German divisions were as promptly and terribly defeated as Gough's army at the Second Somme in March and thirty-five were involved. But the attack was on a twenty-mile, not forty-mile, front, the gap was promptly narrowed by reason of the unshaken hold of the Germans of the ground above the Somme and also above Oise, and, as a consequence, the British

were not able to make any far-swinging advance like that of Hutier in the earlier conflict.

Yet in three days they had covered nearly twice as much distance as they gained in four months of terrible fighting north of the Somme from July to November, 1916. They had taken vastly more prisoners than they had lost in wounded and killed, they had made the greatest advance of any three days in the war on the British side, they had demonstrated that the British Army was once more a factor to be reckoned with and that the British Army had outlived the consequences of the defeats of the spring. Henceforth Ludendorff must deal with Haig as well as Pétain and Pershing. His days of grace, earned in March and April, were over.

V. LUDENDORFF'S PROBLEMS

The end of the Third Battle of the Somme, like the close of the Second Marne, left Ludendorff to wrestle with very immediate and pressing problems, not the least of which was that which involved the selection of a new line on which to stand permanently. He had been crowded back into the Hindenburg desert in Picardy and by fortunate chance the old fortifications of the Somme line still remaining, had provided him with a rallying line, on which his troops had made good their retreat. Here, as on the Vesle, he found himself in lines that were susceptible of defense, but here, as at Vesle, there were unmistakable weaknesses in these lines.

In both cases the point on which he had halted had behind it a serious military obstacle—a river, which might possibly overflow its banks and across which he must retreat in case of a further defeat under circumstances which might lead to a new local disaster. If he were now to accept the defensive his natural line was the Upper Somme from Péronne southward to the Oise Hills above Noyon, and behind the Aisne from in front of Soissons to the old line before Rheims. In these positions he could be sure of making a considerable resistance, and behind the Somme position was the old Hindenburg line, while above the Aisne was the equally familiar and powerful position of the Chemin des Dames.

But to retire to these positions was to abandon all chance of a successful resumption of the great offensive between Arras and Rheims on what had once been proudly de-

scribed in Berlin as the Paris front. Such a retreat would mean a confession that the whole bid for a decision had been abandoned, that Germany had again accepted the defensive. It would mean, too, that she had accepted it at a time when the ever-increasing numbers of American troops arriving in France would make that defensive the permanent rôle of Germany until such time as she was beaten or was able by her peace offensive, after long and stubborn resistance in the field, to end the war on terms which, while they might not be fatal to the German, could no longer bear any resemblance to that victorious peace toward which the Germans had set out on their great adventure of March 21.

On the military side every counsel of prudence seemed to urge a new retirement toward, if not to, the Hindenburg and Aisne lines. In Flanders, too, the salient resulting from the victory of April also invited a Foch thrust and, in its nature, held out to the enemy the promise of even easier and more complete success. Indeed, before the Somme thrust had come, the Germans had begun to draw out of the point of this salient as they had retired from the west banks of the Avre and the Ancre, as if suspecting an attack in both regions.

But at the close of the third week of August it was still a matter of conjecture what Ludendorff's decision would be. He had drawn back his troops from the old Beaumont-Hamel salient, he had retired from the outskirts of Albert, he had surrendered all the positions west of the Somme-Oise front of 1916, but he had not either in Picardy or in Flanders committed himself visibly to the larger retirements which would bring immediate security at the price of a complete surrender of those positions from which he could hope to renew his old campaign.

In the nature of things, it was the judgment of almost all military observers, a judgment in which I concur, that however long Ludendorff might delay his decision, in the end he would be forced to retire, if not under new pressure and a fresh attack, under the threat of some future attack and because of the high cost and extreme discomfort incident to holding the front into which he had been thrust by the fighting of July and of August.

Further than this, it was patent that such a retreat would be for Ludendorff as advantageous as the similar retreat of Hindenburg in the spring of 1917. Given the con-

dition of the country, thanks to the devastation of 1917, it was manifest that the Allies would be unable to restore communications and prepare any new offensive between Arras and Rheims before the close of the campaign. Like Hindenburg, too, Ludendorff, by thus retiring his center, could mass reserves for use on either of his flanks, if the Allies should attack in Flanders and along the Aisne, as Haig and Nivelle had undertaken to do with such unlucky consequences in the preceding year. Then Hindenburg had retreated, declining western battle to give the eastern armies time to dispose of Russia, now Ludendorff might retreat and give German statesmanship a chance, by making peace in the winter, to avoid a military defeat in the following campaign—such a defeat as would enable the Allies to dictate terms of peace.

VI. THE MORAL ASCENDANCY

But all these considerations could not disguise the fact that the Germans had lost that moral ascendancy which their early victories of March, April, and May had bestowed upon them. Between July 18 and August 15 they had lost nearly 75,000 prisoners, more than 1500 guns. They had been driven out of a thousand square miles of conquered territory. They had lost two great battles—one, a battle which destroyed their own great strategic venture, the other a battle in which, at last, Foch, taking the offensive, had won one of the most brilliant and complete successes of military history.

On the material side the case was even worse. At the outset of the campaign the Germans had possessed a superiority of not less than thirty divisions on the West Front. This superiority had been sufficient to give them a decisive advantage at the critical time and place in three momentous engagements. Five great battles had, however, deprived them of the best of their picked troops, five months of delay had enabled the Allies to bring back troops from all the "side-shows," from Italy and from Palestine and Salonica. Britain had drawn upon her metropolitan garrisons, America had put in Europe not less than 1,000,000 fighting troops, the equivalent of eighty German divisions, at least half a million of which were beginning to play a part, and of the latter an equivalent of fifteen German divisions had been used at the Marne.

Numerically the tide had turned; the Ger-

mans were outnumbered. Materially they were at a disadvantage because they had milked their divisions to construct a certain number of storm divisions composed of the best of all divisions, and precisely these divisions had borne the burden of five terrific struggles and were now called upon to limit the extent of a defeat which had just come in the sixth major engagement of the campaign. If their numbers were still great, as was manifestly true, the Germans were now practically without fresh divisions. Their storm troops were decimated and there had come to their army the same dangerous spirit of depression unmistakable in the French Army after the failure at the Aisne and in the British Army after the bloody shambles of Flanders last autumn.

All of these factors were present in the Napoleonic era after the great Emperor had met defeat at Leipzig. The Marne and the Somme together might well suggest comparison with this other Battle of the Nations, which was the beginning of the end in the case of the last soldier to seek to impose a single will upon Europe and the world.

We shall do well not to exaggerate the extent of the German defeat or look for too speedy a relief from the terrible burden of the present struggle. The road to Berlin is long and difficult. What is clear is that it is no longer as impassable as the far shorter route from Noyon to Paris. We have escaped the deadly peril which resulted from Russian defection and collapse. We have regained the moral and the military ascendancy on the West Front. We have in a single month regained all the ground of real military importance which the German took in four months of savage fighting, and there are left to us the resources and the opportunity for new blows before the campaign ends.

The extent of our victory depends upon us still; it depends upon the degree of unity which the Allied nations maintain, upon the extent to which we all of us stand firm against the German peace offensive which is bound to come next winter. We have not won the war, because we shall only win the war by breaking German resistance, which is yet very far from being broken, but we have been in danger of losing the war, the European phase of it, at least, for five long months, and that danger has passed and cannot return unless France or Britain, like Russia, makes a separate peace with the common enemy—a thing unthinkable, as unthinkable

as that we should abandon the task to which we have all set ourselves, before the work was done.

In the history of the World War, July and August must hereafter be memorable. In them we met a peril as great as the peril of September, 1914. We met the enemy at that Second Marne which the Russian collapse had made possible for him, and we defeated him even more completely than in the First. Thereby we liquidated the Russian liabilities, and thereafter, thanks to the supreme genius of Foch, we regained the offensive and began the long task of winning our decision by one of the most brilliant victories in the whole course of the struggle.

VII. THE NEW PHASE OF WARFARE

And now, in the brief space remaining, I desire to say a few words about the changes in the form of fighting which have become manifest in the recent months. That there have been great changes the whole newspaper-reading public is aware. After three years and a half of a war of trenches, of a stagnation on the Western Front, marked by long battles fought within narrow limits and advances of half a dozen miles made only after a summer of conflict, we came, this spring, suddenly to a new situation in which we saw armies, unhappily enemy armies, swinging forward for twenty and even thirty miles in one uninterrupted rush.

In our own turn we are now seeing Allied advances—at the Marne an advance of six miles in a day and of more than twenty in two weeks. At the Somme we have just watched a sweep of a dozen miles in two days. As a result there has been a very general conclusion that we have returned to the old-fashioned war of movement and that we are on the threshold of a complete termination of the warfare of positions, which we all have called trench warfare.

But, despite the outward evidences of a change, it does not seem to me that any such transformation is even suggested. We have at last progressed from the stage of preparation of an attack and of the delivery of the attack to a pursuit of a defeated enemy after a successful offensive which has resulted in taking his positions immediately before us. We have been able to do this, as the German was able last spring, because the element of surprise has been added to contemporary warfare. The German

achieved his surprise by a sudden bombardment in which he used vast amounts of gas shell and by a secret concentration of enormous masses of men. We have achieved ours by the use of small, swift tanks and a further adaptation of the lessons of Cambrai of last year.

The result has been in each case of attack, save in the most recent Champagne fighting, a certain amount of movement, an advance over a considerable country, a tremendous advance measured by the standards of the Somme and Verdun, or of Flanders and the Aisne last year, but in each case the advance has terminated in finding the enemy in a new position, the victor, having outrun his artillery and his supplies, has been brought to a dead halt in front of those new positions, and there has been a prompt resumption of trench warfare.

In a word, that war of movement which the element of surprise has made possible has been a war of movement between positions. It has been established, as that brilliant French soldier and military writer, Colonel Paul Azan, demonstrated in advance in his "Warfare of To-day," that, given the existing numbers on both sides, the resources in artillery and relative importance of artillery in the war, a return to the Napoleonic form of struggle is not possible. The enemy position cannot be broken on the whole front from the Channel to the Jura. Such breaks as are possible are strictly limited and the enemy possesses unshaken lines on both sides of the break and can stretch a new dike between these unbroken fractions of his lines.

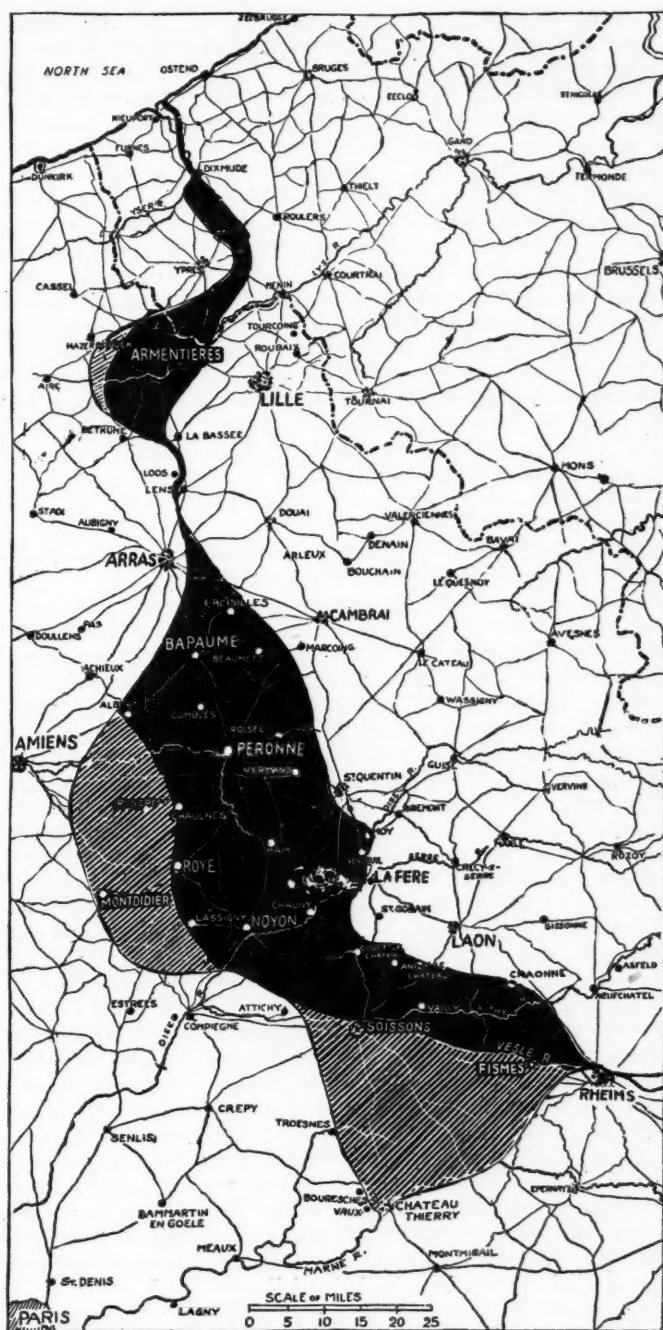
This is what Debeny and Humbert did in Picardy in the gravest moment for us of the whole war. In this case there had been a rupture of not less than forty miles of front, the greatest in the history of the war. Unparalleled masses of picked troops had poured through the gap and destroyed the army which had occupied the lost position. Yet six days later the line was restored behind the Avre and the Ancre. The same thing happened at the Aisne, after the very great disaster of May 27. It has just happened on a more restricted front at the Somme and within three days of the initial break-through.

It seems to me that those who are expecting that there will be any other consequence of such a break-through as we can look for in the present campaign or in the next are oversanguine and have no justification in fact. The German has line after line all

the way back to his own frontier. He has "switch lines" and intermediate lines. He has local reserves and, with each retreat, he will have a shorter line to defend. His present line is at least sixty miles shorter than that of a month ago. As he retires he will retire upon his communications while we shall advance away from ours. Our infantry will presently encounter his artillery and then must come a new pause, a new trench combat.

So far we have merely turned the Germans out of two salients equally vulnerable and obviously the target of any commander having the offensive. In each case the result has been the restoration of trench conditions behind the old front and within a brief time. This, I think, must be the history of the war hereafter, whether the advance goes ultimately to the Rhine or beyond it.

It is true that if the morale of the enemy breaks down, if his troops become so demoralized that they will not rally on any position, his reserves so weak or his materiel inferior, that they will not be able to interpose a barrier to the victor, then we shall have a war of movement, but that war of movement will be a victorious march to Berlin, after the real battle has been won. And no one who has observed the fighting quality of the Germans in recent weeks would care to



THE BATTLE LINE ON THE WESTERN FRONT AFTER THREE COUNTER-OFFENSIVES BY ALLIED ARMIES

(The black sections represent gains by the Germans in the great battle which began in March. The sections marked by black-and-white diagonal lines represent territory recovered by the Allies since they assumed the initiative on July 18. The map shows clearly the "salients" which rendered the German lines especially vulnerable.)

prophecy that such a march of victory is to come this year or next. It may, but of it there is no sign.

Failing this we must, I believe, look for an ever-returning cycle of preparation, attack, pursuit, and finally pause before new positions and for new preparation. We must expect to continue to employ all the lessons of the war and there is absolute necessity that the experience of the European nations should not be lost upon our men. There is an obvious temptation to believe that we Americans who unmistakably have the shock troops to bring a victory have now no need to waste weeks and even months in learning the lessons of trench fighting, since trench fighting has become obsolete. But it does not yet appear that trench warfare has become obsolete or will, until after the victory has been won and the victorious army is making its final march of triumph.

In recent weeks I have been asked over and over again, frequently in letters written by REVIEW OF REVIEWS readers, whether the latest events have not changed all, whether the war of movement has not returned, and if as a consequence success is not within immediate reach. Such impressions led to disappointment both at the Marne and the Somme. I think they will lead to fresh disappointments, if they continue to be held. We are fighting between positions, occasionally now, whereas, before this year, all attacks have been stopped on the first positions. Our advance is therefore over more ground, but it is at an end when a new position behind the conquered line is encountered, because this war is primarily a war of instruments, and men cannot take strongly organized positions defended by guns, when they have outrun their own guns, as they will outrun them in any considerable advance—as the Germans outran theirs before Amiens and the British theirs more recently at the Somme.

It is between positions and in the first hours of a surprise attack that the great captures of prisoners and guns are made. We have seen this in all the fighting this year, and never more clearly than in the last bat-

tle. But three days at the Somme and two in the Marne salient exhausted the element of surprise and permitted the enemy to restore a fighting front. Afterwards he restored his line of positions at the Vesle in Champagne and along the old Somme line in Picardy. If heavy artillery and transport could move as fast as infantry over ruined roads and unbridged rivers, then the first success might endure until the victorious troops had reached the Rhine or the Meuse. But neither heavy artillery nor transport can perform this miracle and, without both, the victors are presently helpless, while the vanquished are once more capable of resistance, because they have retired upon their guns and their supplies and have behind them still undisturbed communications.

We have, then, to avoid the danger of expecting miracles. We are not yet in the period when Sedans are possible. They have not yet been conceivable since the first Battle of the Marne. Waterloo and Jena belong to another form of warfare and another era of military history. The man is the creature of the machine and the machine, the heavy gun, can move only at a snail's pace. Lacking its support victorious troops can be checked by field artillery and machine guns in the most hastily improvised trenches and before the heavy guns can arrive these trenches can be transformed into positions or the enemy can create, still further back, positions which can only be reduced after new preparations, even if he had not prepared such positions in advance of his defeat. And we know the German has prepared many such positions from the old Hindenburg line to the Belgian frontier and from the Belgian frontier to the German.

This is why the Second Battle of the Marne was not a Sedan and the Third Battle of the Somme ended twelve miles eastward of the trench lines on which it began. This is why there is no present outlook for a return of the true war of movement. Above all, it is the reason why our new troops should learn the old lessons and thus avoid the old sacrifices.



"FABRICATING" FARMERS

BY CARL VROOMAN

(Assistant Secretary of Agriculture)

NOT long ago, a member of the Organization of Resources Committee of the Province of Ontario, Dominion of Canada, stated, in three sentences, the war-time problem of the farmer and then, in one sentence, gave the formula for solving the problem. The problem applies not to Ontario alone nor to Canada alone. It applies equally to the United States, and every state in the Union, and every community in every state. Here, substantially is what he said:

1. In our cities, towns, and villages there is sufficient supply of partly experienced and inexperienced help to meet ANY demand that may arise, and this help can be secured.

2. The DEMAND for farm labor, as expressed in definite applications for help, does not fully express the NEED for farm help.

3. The farmers generally are aware that city help is being offered and know where to apply for it but they are not, as a rule, willing to make use of it.

4. These considerations being true, the resolution of our problem is to induce farmers to increase production by using to the fullest extent the labor available.

There they are, problem and solution, true as any theorem in geometry. Yet the conclusion may be stated in more direct terms.

The solution is to show the farmer that the city labor offered is *worth using*—and to make sure that it is available for him when he needs it. For the first time we are in position to make the demonstration, to chalk the whole thing on the blackboard and write "Q. E. D." beneath it. Briefly, here it is:

Men and boys—and women, too—without previous farm experience can acquire, in a brief time, a rudimentary knowledge of ordinary farm tasks sufficient to make them serviceable as farm workers and to entitle them to be received by the farmer with, at least, an open and unprejudiced mind. This has been demonstrated at some scores of places, through and to some thousands of people, this spring and summer.

Ten days of hard, consistent work—just as hard and just as conscientious as a soldier would be required to do in training camp—

will convert a city boy of no previous farm training into a farm hand who can do fair work worth a fair wage, at ordinary farm tasks.

Hitherto, the farmer has not believed that this could be done. And there was nobody to convince him that it could be done. Some of us believed that it could be done, but the experiment had not been tried systematically and on anything like a large scale.

Now, this plan has been tried repeatedly and found to work. Some hundreds of instructors in agricultural colleges, high schools, and elsewhere know how to make it work. Better still, several thousands of farmers have had satisfactory evidence of it on their own farms, and what a farmer has seen done on his own land, when his own crops were at stake, he believes and does not doubt.

Can the comparatively few thousand farmers who now know this fact be made to act as the little leaven that will leaven the whole lump? Can the experience of these men be imparted to the six million other farmers who have not yet learned how successful has been this method of solving the farm labor problem?

If the facts can be carried home to all, or even a very considerable part of the farmers of this country—yes.

If the press will disseminate the fact; if those who are officially charged with increasing crop production will recognize and utilize the fact—beyond doubt, yes.

Here, then, are the facts!

MAKING FARM HANDS OF CITY BOYS

With ten days' instruction, the Pennsylvania Agricultural College trained 390 city boys so that they have made good farm hands through this crop season. A class of 130 boys was trained for ten days, then sent out to work on farms and the training of the second class of 130 boys was started. At the end of thirty days, all of the members of all three of the classes were at work on farms. Their work has been checked up

by the Office of Farm Management, United States Department of Agriculture, and found to be satisfactory to the farmers who employed the boys.

Purdue University, Indiana, began with a class of ninety boys for ten days, followed with a class of 120 boys for another ten days, and then with a class of 125 boys for a third ten days. Jobs for all these boys were secured even before they had completed their ten days' course of training. They are at work and, as checked by the Office of Farm Management and other agencies, are giving satisfaction.

One of the high schools in Chicago trained a large number of boys for ten days in a livery stable in the heart of the city. The livery stable horses were used. A few cows were borrowed from a dairy. These boys who had never worked outside of the city a day in their lives and who did not go outside of the city for their ten days' training were put to work on farms in Northern Illinois and adjacent portions of Indiana and Michigan and have made good farm hands.

At College Park, Md., a large class of boys, principally from Washington City, were given a ten days' course in elementary farm practice. These boys are at work on Maryland farms and are doing work that is satisfactory to the farmers.

In Massachusetts, a number of boys were given intensive agricultural instruction in connection with military instruction, for ten days. These boys are doing satisfactory work for Massachusetts farmers.

On 600 dairy farms in New York State, city boys who never had any previous country experience are doing all the dairy work this summer while the farmers, with their regular help, are doing the rush work of the summer season. These boys were given one month's training in dairying at one of the agricultural high schools. When the crop season is over and the farmers are again able to do their dairy work with their regular help, these boys will return to school or to jobs in the city, but ready for work on the farm again when the farm needs them worse than the city does. They have given a measure of flexibility to the dairy farm labor supply in New York State.

In Oregon, 600 city women, without any previous country experience, did satisfactory work on fruit farms this summer. They had a short period of training at one of the high schools.

In Wisconsin, 5000 farmers got satisfactory work out of boys whom they trained themselves, on Saturdays, for a couple of months before school was out last spring. These boys got about the same number of days' training as did the boys in other States who were trained at colleges and camps, but they have the advantage of being at work for the men who trained them. Those farmers, however, had to be persuaded very diligently by county agents and others before they would take the boys to train.

With slight differences and on varying scales, the same thing has been done in New Hampshire and Delaware. The system was basically the same everywhere. At some places the work was divided into twenty subjects, with a half-day devoted to each; at others, into ten subjects, with a full day devoted to each.

THE PURDUE PLAN—ONE DAY FOR EACH SUBJECT

The Purdue University plan is typical and interesting. The work was arranged under ten subjects and a day devoted to each. The boys were divided into groups, so that each one of the subjects was taken by some one of the groups the first day. Each group was taken through the entire range of subjects, under conditions as nearly as possible like those the boy would have to meet on the farm.

On the day devoted to horses, the boys reported at 5 o'clock in the morning, groomed the horses, cleaned stables, and were shown how to feed. Each boy was required to harness and unharness horses, to familiarize himself with the proper fitting of collars and other portions of the harness, to drive a team, to haul and spread manure, and to do general routine work that would give him experience in the handling of horses. He was given instructions as to the care of horses that were heated and as to the methods of approaching horses that were not well broken or were ill-tempered.

In dairy work the boys were required to report for duty at 4:30 in the morning, taken to the barns where the University cattle are kept and required to prepare the stalls, this being necessary inasmuch as conditions at Purdue are not ideal for milk production, but are similar to conditions that exist on the average farm where milk production is one of a number of sources of income. During the day they were assigned

to the feeding of cattle, brushing and cleaning cows and milking them, mixing feeds and looking after the general routine of a dairy barn. They were taught the principle of cooling, straining and separating milk, and were given the opportunity of seeing the milking machine in operation.

For the day's instruction in general live stock work the boys reported at 5 o'clock in the morning, were required to clean the stalls in the steer barn, to bed down the steers, to bring in the beef cows and nurse cows from the pasture, assist in dividing the cattle into different lots and in distributing the steers. During the day they were assigned to the hog lots and required to feed pigs under the direction of the hog herdsman. At the time that one group of boys was assigned to the hog lots, another group was assigned to the sheep pastures, etc., giving them some degree of familiarity with all kinds of animals.

During the day's instruction in harvest work the boys were taken to the hay field and given some kind of work that would tend to make them efficient in handling a fork. Part of the time was spent in pulling weeds and clearing out fence rows. Special attention was given to instructing the boys in the identification of the various crop plants. If it was not possible to familiarize them in the fields with the plants they were likely to see on the farm, they were taken to the laboratory and there shown specimens of these plants.

On the day devoted to poultry work the boys reported at seven o'clock, were taken on a general tour of the poultry farm, shown the proper method of feeding and housing, taught to clean and disinfect poultry houses, to dust and dip fowls and other things commonly required in the farm poultry yard.

On the day devoted to the work of cultivating crops the boys reported at seven o'clock, were taken to the field, required to hoe and plow corn and other crops, to pull weeds and to do other general crop work. A part of the time was spent in identifying some of the more common weeds.

Another day was devoted to the orchard, the boys reporting at seven o'clock and being kept busy throughout the day in pruning and cutting out blighted wood, disinfecting wounds and destroying the removed wood. They were taught to thin apples, to prop the heavily loaded trees, and to handle the sprayer. Some time was spent in picking fruit whenever there was any available.

A day was devoted to farm mechanics. In this work the boys were first taken into the laboratory and taught how to make some of the more common and necessary rope knots. They were then shown how to remove and replace plough shares and other parts of ploughs, and to make adjustments on other implements and machinery. They were also instructed in the methods of laying out a field for ploughing.

During the day devoted to garden work the boys were taught the principles of garden production, how to use handle hoes and wheel hoes, how to gather and prepare vegetables for market, how to sharpen garden tools and how to identify most of the common garden plants and seeds.

HOW FARMERS HAVE BEEN CONVINCED

All of that does not make a finished farmer—not by a thousand miles. But it does make a potential farm hand who, while he may be green, knows enough not to be a nuisance, knows what a hoe is for, knows that it is his job to chop down the weed and not the cabbage, and knows which is the cabbage and which the weed. If, then, he is fortunate enough to fall into the hands of a farmer who has good horse-sense and some patience, he will do worth-while work from the beginning and will round out into a good farm hand.

More and more while this war lasts, the farmer will have to depend upon these "fabricated" farm hands. Up to this time, the farm hands taken away to war have been between the ages of twenty-one and thirty-one. Now, another ten-year group is to be taken—below twenty-one, perhaps, and certainly above thirty-one. The most promising reservoir from which to draw is that of city boys. The sooner the general run of farmers realize that fact and act upon it, the sooner they are willing to use city labor and the sooner they are willing to let their needs be definitely known, the better for everybody.

In the past, the farmer has not been greatly to blame for his attitude on this matter. He has had some grounds for being suspicious of city labor. He has had grounds too for being wary of the agencies to which he had to apply in order to secure labor.

But, rapidly now, those grounds are being cut from under his feet. The agricultural colleges, the Federal and State Departments of Agriculture, and various other agencies,

are becoming interested in the work of giving to city boys the sort of preliminary training that will make them of some use to farmers. Some of the most incisive minds in agricultural administration are convinced that this is one of the biggest and most important things to be done toward winning the war.

As yet, hardly more than a meagre beginning has been made, but men with the character and energy necessary to success in so big an enterprise are interested in it. It seems probable that, instead of one training school for farm hands in each of a few States, there will be a considerable number of such schools in every State, each devoting its best energy to this task, and that, before next spring, they will be able to turn out an effective and fairly adequate force of fabricated farm hands from the cities.

But all of that will be labor lost unless the farmer will accept farm hands from the city after they have been given preliminary instruction sufficient to make them useful on the farm. The few thousand farmers who have tried briefly trained city boys on their farms this year may be relied upon as

propagandists for the fabricated farm hand, relied upon to spread the gospel just as far as their influence reaches. That is going to be a tremendous help. In some communities, it will be adequate. But, unless it is directed, and magnified by means other than the farmer's own voice, there will be whole States that it will not touch at all.

The fact that the thing works—that good old conservative farmers have worked it—that bare fact must be taken home to all the farmers of the United States.

The means for doing it? All means that exist for the dissemination of truth. The press, the pulpit, the school; the lodge where all ranks of men meet on one level; the casual word between men across the line fence or at the store—by every method, big and little, these truths should be driven home.

It is a fact that city boys, with brief training, can do good work on farms.

And it is a fact that, in order to maintain food production at the standard required to win the war, the farmer must make up his mind to use labor other than the kinds to which he was accustomed before the war.



TEACHING THE DRAFT ARMY TO FARM AS WELL AS TO FIGHT—A PORTION OF THE 400-ACRE WAR GARDEN AT CAMP DIX, N. J.

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EMPLOYMENT MANAGEMENT— A NEW SCIENCE

BY DONALD WILHELM

THE men, and the women, who are really prepared are the trees of deeper root who now are giving America its strength and its glory. For *real* preparedness is more than merely casual, fortuitous, or necessitous. It is innate capability and facility and promptitude—the produce of years of growth—for doing the things that have to be done.

There is the President, persisting all his life in studies invaluable to him now.

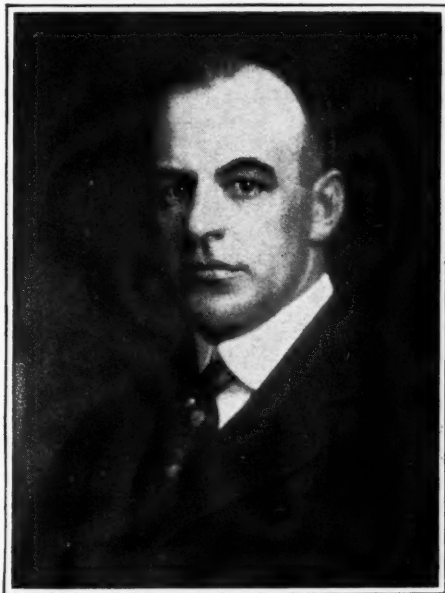
There are the engineers, bridging over, from Source to Necessity. There is Ford. There is Schwab.

There are the undistinguished many who have been called and are not found wanting.

And among these undistinguished many there is a small group of pioneers and policy-makers who are the founders of a new science of direct and far-reaching value to the future unity, efficiency, and democracy of the United States.

Twenty years ago this science did not exist at all. During the last ten years it made a start. Like all panaceas for ills, it proved to be "catching" and continued to grow. In the last year, this year of war, it has attained its maturity. It is difficult, and always a little dangerous, to ascribe to any individual the credit for originating anything so necessarily universal in its application and usefulness as a science. Nevertheless, it seems clear that amidst an untold amount of industrial confusion and inefficiency the founders of this science were, among the undistinguished many who groped at it and grappled with it, a small group who had *really* prepared.

One of these is silent Stanley King, who, like most of the leaders in the new man-power science, came from Boston. Mr. King was called from his work with the Council of National Defense to be Assistant to the Secretary of War and the first head of the industrial service section of the War Department. It was he who summoned Herman Schneider, Dean of the School of Engineering of the University of Cincinnati, whose



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DR. ERNEST M. HOPKINS

(President of Dartmouth College, now Assistant to the Secretary of War—in charge of industrial service matters)

vision did much to prevent serious interruption to production in the Ordnance Department and nearly all the others who have been so efficacious in man-power work in the War Department—among them Dr. E. M. Hopkins, president of Dartmouth College.

Dr. Hopkins, a business man, was a devotee to the problems of industry first, an educator afterward. He succeeded to the supervision of the Industrial Service Section of the War Department when Mr. King became private secretary to Mr. Baker. There he brought forth a high degree of order from industrial confusion existing in 15,000 plants and factories supplying the Army.

Others in the small group are Dean Schneider, who hardly can be mentioned too often; Major Francis W. Tully, Miss Mary van Kleeck, formerly of the Russell Sage Foundation—three pioneers who, led by

Dean Schneider, wrought miracles in the five thousand corporations, many of them new and enormous, which are serving the Ordnance Department; Major Byers Gitchel, who is in charge of similar work for the aircraft makers; Maurice L. Cooke, a member of the storage committee of the Council of National Defense, whose other activities were many; and, of the Emergency Fleet Corporation, a quiet, smiling, easy-going fellow who also had really prepared, while doing the things he aspired to do, for the things that now—and in the days of reconstruction—must be done—by name Meyer Bloomfield.

When the war came to America, this group of men one by one was called and not found wanting.

They were given desks, and blotters, then, and told to meet a challenge that was appalling, stern, complex, the most dangerous of enemies to national war efficiency—the man-power problem of industry.

"It is easy," Mr. Tully remarked, after a few weeks of experience, in which he discovered here and there in Washington efforts toward grappling intelligently with the man-power problem, "to diagnose the situation. But it is very hard to remedy it promptly. The only remedy seems to be the employment manager—one for every plant or group of plants. When we look about for trained employment managers we find there are none. Obviously, then, the only reasonable thing to do is to provide them by supplying training for a quite new, attractive, and invaluable profession."

That is why, in part, the necessity having

been made clear, the University of Rochester, thanks to the coöperation of many educators and other citizens, established an intensive course to train employment managers, a course which has already graduated two classes. Harvard followed, then Columbia and other educational institutions. Now, a year later, so great is the demand for such training that Capt. Boyd Fisher, representing the War Department, is travelling over the country lending his aid in establishing preparatory schools to qualify a large number of applicants, many of whom are women, for advanced "graduate" work.

"It is time we did so," says Dr. Hopkins. "It is time that we began to supply some of the intelligence that we have for more than a century been applying to inanimate matter, to human beings."

Dr. Hopkins went on: "The work done in the industries furnishing supplies to the Quartermaster Corps was calculated primarily to increasing production; but these industries, including 15,000 plants and factories, were established industries. The man-power problems of the Ordnance Department and of the Emergency Fleet Corporation were much greater. Many of the 5,000 plants supplying munitions of one kind or another were entirely new while many others had to be adapted to the production of articles never manufactured in America before, at least in quantity."

The Ordnance Department, in other words, confronted the same difficulties in man-power that for a time almost thwarted the effectiveness of the shipbuilding program.

Many of these difficulties, and something of the significance of the new science of employment management, can best be illustrated in terms of the shipyards by Mr. Bloomfield, who, though not now the head of the greatly enlarged industrial service section of the Fleet Corporation—which is headed by Professor L. C. Marshall, of the University of Chicago—is nevertheless a consulting specialist for it, travelling about, from yard to yard. For years before the war he was a pioneer in vocational guidance and in the study of industrial problems.

In August of last year, as the records show, he was told by General Goethals: "You are to be responsible for the man-power problem of the yards." There were then 70,000 workers in the yards. Now there are nearly 400,000. Among the 70,000 workers, few of whom were trained in shipbuilding, there were endless shiftings, so



DEAN H. SCHNEIDER



MAJOR F. W. TULLY

TWO EXPERTS ON LABOR COÖRDINATION NOW
SERVING THE GOVERNMENT AT WASHINGTON

many that it was hard even to get an accurate count. In one yard, to illustrate, in the course of three months more than 17,000 men hired and at the end of the period only 1,700 remained. The labor "turn-over" was enormous. Each of its infinite changes disrupted, to some extent, the war program and cost, as industry estimates, thirty dollars or so—frequently cost much more, in the destruction of invaluable tools and material and rejection of work.

Now the army in the shipyards is doubling itself every three months. In other words, it takes and retains every week 4,000 men or so. As a result, down shipways numbering more than exist in all the rest of the world combined, ships go splashing regularly—two big ones every day, nearly a hundred on the Fourth of July.

This result is nothing casual or fortuitous. Nothing in industry ever is. It is the fruit of trees of deeper root, of men who had really prepared.

In order that one may see and understand that fruit, it is worth while turning to the background a little, to note that when the war came to America there came, along with the cry for ships, first the cry for steel, then for lumber, for boilers, for equipment. At the very last, it seems, came the cry for men.

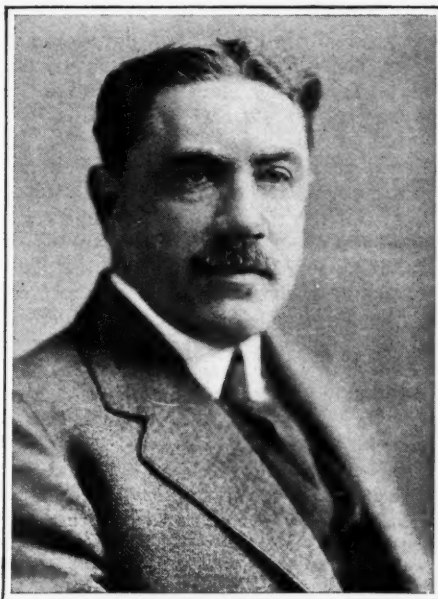
"We all thought," Mr. Bloomfield told me one day, "that we could wave a magic wand and 500,000 men would stand ready."

"But the labor market is tight?" I inquired.

"The word 'market,'" he mused, "implies forethought, organization."

And the next day he told the first conference of shipbuilders that had been held in America in a half century: "We have in this country now no labor market. When a man gets out of a job he drifts along to another one, instead of ascertaining through a national employment agency just where he is needed most. And when a job is out of a man, the employer sends out to locate one, or puts a sign in his window hoping that a man will come along to fit the job." This condition, by the way, the Department of Labor is at last correcting by the extension of its employment system.

"The shipbuilding industry is a peculiar one, in nearly all respects different from any other. First, there is this paradoxical thing about it: It is almost the most highly individualized of all industries, yet its product is essentially a coöperative one, a social product, if any product is—for a ship must



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MR. MEYER BLOOMFIELD

(Prominent in the organization of labor for Government shipbuilding)

be a home, a hotel, a power plant, a carrier, too. The shipyard owner is individual; so are his men.

"The shipyard owner must be the most skilled of all executives, one who can manage successfully hundreds of highly individualized workers. He must be, and his men usually are, extremely self-sufficient. They must use, in making a ship, the products of about twenty contributing industries, and use those products intelligently. Otherwise, instead of a ship, they will produce a disaster. They must be experienced in many trades, and it takes a long time to train these trades—longer than it used to take to make a ship.

"Here is another distinctive thing: In establishing most industries, you go where your labor lives. But in establishing a shipyard you must move your labor and provide for it at some point where the water is deep, yet where land is firm enough to serve as a sill for holding up 10,000 tons or so."

When we remember that there were in America 76 yards, all heavily burdened with Navy contracts and all seizing upon every available man; that this was a time of unprecedented industrial expansion, when immigration had ceased and tens of thousands of foreign reservists had left the country;

that the program called for more than a hundred new yards, in fact a whole new industry, and for 500,000 highly trained men drained from other industries—when we remember these things, we easily realize that there *were* difficulties!

The housing problem, a cause for infinite dissatisfaction, was temporarily solved, chiefly through the coöperation of individual communities, pending permanent provisions by the Shipping Board.

The transportation problem was, as far as possible, adjusted—in some cases by coercion, to achieve which Government inspectors rode on every line concerned and made reports that went to Congress; in many other instances by the rarest kind of whole-hearted coöperation.

The vocational problem, too, was sent rapidly on the way to solution by the establishment at Newport News of a great shipyard-workers' normal school, from which, after six weeks of intensive training in teaching and in the yards, graduates sent from all the nation's yards return home to establish similar schools. In that way more than 75,000 trained men were provided for in the course of the ensuing year. The technical schools of the country also lent a hand, work with the colleges was developed, and a wholly new literature, vocational in its kind, was prepared for wide and free distribution.

Nevertheless, output, which is the essence of this war, was not what it might be. Something still was wrong!

So the man-power experts went at the huge machine like specialists. They located the trouble, at last, at the most crucial point in any organization—the point at which the employer meets his men—the clearing points of orders to the men—by name no other than the foreman.

The foreman, he found, was the weakest link in the whole organization. "Why is it?" they asked, "that *this* foreman loses his men faster than the employment offices can supply them? And that this other foreman keeps his men, nearly every one, and has his department working smoothly? Why is it that this foreman gets from a gang of riveters 100 rivets in a day, and this other foreman, from the same gang, gets five times as many?" Of course, foremen's schools were established.

But that by no means ended the efforts. This study of the foreman, which may seem a little thing, has led to results big and invaluable—to the establishment of a new sci-

ence of management, a new profession with representatives now in every yard, and to consequences prophetic, it seems.

"Every profession," Mr. Bloomfield says, "and every science has gone through its confused and undignified stage. But what is the difference between confusion and the spirit of science in a profession, or in an organization? Let me answer by inquiring, What is the difference between philosophy and gossip? Between luck and law? Between home improvisations and medical practice?"

"When you bring the spirit of science into a situation what do you do? You go to the records, or to experience, and gather together all the precedents, the product of research and personal equation; you make comparisons, you reach conclusions or principles for your future conduct, which, in turn, you proceed to test and record.

"And mind you, in this instance, in the shipyards, all is in the interest of production. No one wants charity. And it is not charity; it is not altruism. It is not kindness, or sentimentality. What we are asking for, and what the Emergency Fleet Corporation is getting, is understanding. We are asking for more headwork and less footwork, more intelligence, better use of experience.

"The result is a wonderful fighting spirit in the yards, throughout the whole organization. It is no longer a case of conflicting motives. We want production, the men want it. They know that shipbuilding is here to stay, that they are getting a chance to fight for the nation, that they are being trained for real careers.

"And does not all this go with the highest teachings of democracy? Isn't an organization a miniature democracy? We used to think, in our autocratic days, that there should be one will, that of a master, at the top. But the new science of employment, like the growing science of democracy, recognizes that there is no master, that an organization is a collection of consciences and wills, working toward a common goal. In that conception we find ready cure for nearly all industrial troubles. Management, in a word, becomes simply a study, a science of human relationships, with principles, precepts, forms. Once you take that view, that an organization is a collection of wills—not economic units or commodities—you begin to get results.

"It sounds too simple? It is true. We are proving it."



French Pictorial Service

AMERICAN SOLDIERS IN FRANCE, MARCHING TO THE FRONT WEARING GAS MASKS

"GAS" IN THIS WAR

THE VAST DEVELOPMENT OF A NEW MILITARY WEAPON

BY CHAS. BASKERVILLE, Ph. D., F. C. S.

(Professor of Chemistry and Director of the Laboratories, College of the City of New York; Member War Committee, Technical Societies of America; Expert on Fumes, Noxious Vapors, and Anesthetics)

A MAN who carries a gun is pretty sure to have a row some time. A man who carries a gun in his association with peaceful people acquires a definable bravado, which in certain circles is characteristic of a bully. But there are bullies in other circles, where superior workmanship may be evident, or philosophic discussions take place, even where quotations from the Bible or Shakespeare are cited in verbal support of an argument, and there are bullies who mingle in all these circles. All of them are characterized by assertive arrogance. If the correctness of the bully's assertion be questioned by a peaceful person the gun may be shown, or even used. Righteous indignation prompts one of the gathering to seek a gun for protection, and he may even injure the bully in his clumsy and unaccustomed use of it.

The bully is not necessarily a physical coward, but when he becomes hard pressed and sees red he seeks every device for annihilating those who had questioned his position or opinion. He could not be wrong, in his own opinion, in anything. He stops at nothing to carry his point. He breaks all

the rules governing decent people, just as he gave evidence of his purpose, if need be to him, to disregard the customs of peaceful people beforehand in carrying a gun. That is the recent history of the German nation, and particularly in this great war. The use of poison gases is just one, but perhaps the most atrocious of his barbaric innovations.

The American chemists, many of whom were former students in Germany, had become restive under the German overbearance. In 1912, when the International Congress of Applied Chemistry convened in the United States, we had disgusting evidences of German arrogance. Not only did some of the German delegates, like pigs, consume food and drink provided by their hosts, but on their return to the fatherland they put into print criticisms of the management of the Congress and its entertainments. They even indulged in allusions to the President of the United States, who put himself to great personal inconvenience to meet the delegates of the foreign nations in Washington to extend greetings for our country. Only words of thanks and appreciation of the hospitality

extended came from delegates from the civil nations of the world, and practically all were represented.

At least twenty years ago the American universities and schools of technology foresaw the need of breaking away from the influences of German institutions for higher learning and, in spite of the German commercial intrigues, builded so that the number of students, especially in the sciences, were provided at home with what was needed. The relative number of students who went to Germany was materially diminished. By virtue of advertising propaganda of the Germans our chemists failed to receive their dues at home. Germany was a preëminent specialist in making dyes, and the colors made the noise; but in that field the United States has now found itself. And when this war is over and the accomplishments are summarized it will be found that in the chemistry of war-making, Germany had again been the braggart.

Poison Gases in Warfare

Poisonous gases are produced by some explosives which have been commonly used in warfare. They are the products of the explosion. The direct use of poison gases, however, was specifically inhibited by The Hague Convention. They were used deliberately for the first time on April 22, 1915, on part of the Ypres salient. A poison gas cloud (chlorine) was there launched by the Germans against the French and British, where they joined, the Turcos and Canadians receiving the brunt.

Frustrated in the quick accomplishment of their aims, the Germans again threw all honor aside, as they had done in Belgium, and used poison gases. In this way they proposed to end the war quickly. The immediately bitter purpose was to kill and affect the morale of the colonials. Written and spoken narratives of the effect of that great greenish-yellow cloud on the minds of those soldiers, as it rose right out of the ground, rolled toward and enveloped them, the first whiffs choking, then producing spasms of agony, are thrillingly terrible. Many died a horrible death; many who raced away ahead of the weird waves got sufficient of the gas to affect their health seriously.

The morale was not broken, however, and the war was not soon over. If the Germans had done the vicious thing more thoroughly the war might have been over long ago.

God be thanked for German *inefficiency*. Since April, 1915, gas has been used constantly in various forms and ways by the Germans, and the Allies have not failed in reprisal. In fact, no doubt we shall soon be publicly informed of our contributions in this direction. The enemy has had ample opportunity for years to realize that the American mind works in ton lots and not in pounds production, but he apparently did not grasp the big idea. Some of the means adopted by our Allies and a few of our additions are current knowledge in technical circles, so no comfort can come to the enemy in indicating them to another group of readers.

Chemical Warfare Service

On our entrance into the war the progressive policy of the Bureau of Mines at Washington, characteristic since its foundation, prompted it immediately to start its experts, who had been solving problems of mine gases, in a study of war gas. Committees of the American Chemical Society and National Academy got many university and college laboratories busy. The Sanitary Corps of the Medical Department of the Army began work on defensive measures, while the Ordnance took up the matter of production of the offensive materials. The Bureau of Mines established, in conjunction with the War Department, an elaborate experiment station in the buildings of the American University, where the Chemical Service Section, a newly established part of the Army, worked with civilian experts on researches in finding new means of growing heads on the hydra, reputed to have been fathered by two well-known German chemists. Over a thousand chemists, about half in uniform, were busy out in those woods near Washington. Experts from England (Major Auld especially) and France (Major Grignard and Lieutenant Engel) came over here and we sent some experienced chemical engineers over there. Many people were anxious to be busy, some were anxiously busy, and some were plainly anxious because of duplication, lack of coordination, etc., in short, lost motion—a condition inevitable in view of the circumstances.

Now all this has been changed. The President by authority conferred by an Act of Congress, May, 1917, "to coordinate or consolidate * * * in the interest of economy and the more efficient concentration of the government," ordered the organization



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SOLDIERS AT A NATIONAL ARMY CANTONMENT, WITH GAS MASKS DONNED, CHARGING THROUGH A HAIL OF EXPLODING GAS BOMBS TOWARDS THE IMAGINARY TRENCHES OF THE ENEMY

of the Chemical Warfare Service, National Army, which was instructed to take over all the activities referred to above. Major-General William L. Sibert, the distinguished engineer, who was General Goethals' right-hand associate in building the Panama Canal, and commander of the First Division of the Regular Army in France, was made director. The General is a kindly wise giant of power and great strength. He uses few words and will have around him only those who can "deliver the goods." He has already secured some of the best chemical talent in the United States, and there is no better elsewhere. This new organization plans to have at least 2500 officers and 20,000 selected enlisted men. It is rapidly rounding out. The General places *production* as the most important factor, but he recognizes the almost equal importance of having an adequate supply of the reserves. The nature of what is going on in offensive and defensive gas warfare appears in the following classification, which, it must be understood, is not official:

1. Production in quantities of known poisonous or incapacitating substances to be used against the enemy.
2. Production of protective means in quantity to be used against toxic agencies by soldiers in the field and sailors in action.
3. Researches on new incapacitating substances, and small units for quantity production of these novelties.
4. Researches on improving the protective agencies to neutralize any unknown substance the enemy may spring.

5. Researches on means for instantaneously detecting the presence of toxic substances coming from the enemy, that quick alarm may be given.

6. The maintenance of chemical industries and instruction in qualified institutions, where ample chemical reserves are to be trained not alone for warfare purposes, but for the industries and instructors for research and teaching as well.

It cannot fail to be a source of gratification to the American people to know that this program is proceeding at present in a most satisfactory manner, especially with emphasis on *production* of toxic agencies and means of protection. A limited discussion of some of these agencies and means is given below.

Gas Clouds

The first use of poison gas by the Germans was associated with trench warfare and depended upon the generation of a dense cloud of a heavy gas, which was intended to travel along with the wind, hugging the ground and falling into the trenches, where its work was mainly done. In preparations for such an attack, cylinders weighing about ninety pounds, containing about forty pounds of the gas liquefied by pressure, were cached approximately every yard in the front trench opposite the position to be gassed. Lead pipes were joined to the cylinders, led up over the top of the trench, bent into position, weighted, so that the exit was some distance away from the operator—pioneers, they were called. Under favorable meteorological con-

ditions, which were carefully determined in advance—a breeze blowing toward the enemy at a rate from four to eight miles per hour—the valves were opened so that the cylinders would be emptied in about three minutes. Chlorine was used in places in such concentration that exposed metal parts were corroded, vegetation was bleached a mile away, and its serious effects upon domestic animals were noted several miles away.

It may be of interest to note favoritism in venom by calling attention to the fact that the Germans used poison gases primarily against the English and French Colonials and Russians at first. Also it may be of equal interest to note that the British did not use gas in any form against the Turks at Gallipoli, although they had it there, and no doubt its use would have altered the outcome of that campaign. The Turks themselves have not used gas.

The element of surprise constitutes an important factor in such use of gas clouds, in fact in all phases of gas warfare. Against chlorine a simple protection was quickly devised, namely, a cloth hood, provided with goggles, which might readily be slipped over the head and be tucked under the shirt around the neck. Before issuing, the hood was treated with a solution of soda and "hypo," which neutralized the chlorine. It was another wonderful service of women in war—the making of 250,000 of those hoods by the women of Great Britain and getting them to France in a week! This means of protection long since became obsolete. The matter of defense is referred to more fully below.

A number of gas-cloud attacks were launched on the Western Front, but the casualties were probably much greater at each assault on the Russian Front, except the first time chlorine was used at Ypres, when 5000 were killed and as many prisoners taken. The Russians in many instances were never supplied with protective means of any kind, although Russian chemists later made some very valuable suggestions in selective defensive agents and devised some good masks. Up to August, 1916, the Germans claimed to have killed nearly 50,000 by gas. No data as to total casualties are available. In this connection it may be said that chlorine alone was not the sole agent used. Toward the end of 1915 about 20 per cent. of phosgene (carbonyl chloride) was mixed with the

chlorine. It is a more dangerous gas, because a comparatively slight gassing may show its fatal action only after several hours, when the soldier is out of the active zone.

Hand Grenades

Incidental to trench warfare the Germans developed hand grenades of glass and metal. They used them when on raids for clearing dug-outs and killing sappers. The grenades were filled with such liquid chemicals as bromine (meaning stench), chlorsulphonic acid, etc.; all corrode the skin as a liquid, which fumes violently on exposure to the air, giving off suffocating and poisonous vapors.

Gas Shell

The use of gas shell was developed by the Germans soon after they applied the gas cloud. This gave an opportunity to use a variety of substances unsuitable for gas cloud, although chlorine and phosgene were also used in shell. These two substances are liquid under pressure, as has been noted, and only a small powder charge was required to crack the shell when it reached its destination. The liquid immediately vaporized and produced a local cloud. The difference in sound as they burst made their detection easy.

The gas shell was extensively developed. Heavy corrosive liquids and even solids were charged into the shell provided with a high explosive, such as T. N. T., which on explosion by means of a suitable fuse, converted the liquid into a mist, or the solid was so finely pulverized as to become a dust cloud. These particles of mist or dust were of such small size that it was intended that they should pass through pores of the protecting hood or mask then in use. They were also less reactive with the chemicals used in the first filters. Furthermore, the mist would attach itself to the clothing or cling to the ground and slowly evolve poisonous or irritating vapors long after the gas shell bombardment had ceased. Men were thus poisoned by these delayed vapors some time after the engagement.

Lachrymators

All the substances used were not necessarily of a poisonous nature, unless in great concentration. One class of these substances, known as "tear shell" or *lachrymators*, were among the first used by the Germans. They used this "T-Stoff" (xylyl and benzyl



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AMERICAN TROOPS BEING TRAINED IN THE USE OF LIQUID FIRE, ONE OF THE NEW DEVICES FOR WAGING WAR
(The effect of the liquid fire is shown by the flaming trees and bushes in the line of attack)

bromides) especially against the French in 1915. One part in a million of air by volume causes the eyes to so water as seriously to interfere with vision. Blindness, temporary, usually results from higher concentrations, which when very great produce nausea and vomiting.

Several other *stoffs* have been and are used; for example, "B-Staff" (brominated methylethyl ketone), "Green T-Staff" (a mixture of xylol bromide and bromacetone), each having particular tactical values, of which the limits of this article do not admit a discussion. The main purpose, however, is quite apparent.

Sternutators

When the Germans observed that the Allies were learning their game and their gas attacks were becoming less and less effective on account of the defensive means (masks) employed, they brought into play (1917) a "blue cross" (so marked) or "sneezing shell." This shell was filled with a solid (diphenylchlorarsine), mixed with a high explosive. The explosion was very similar to that of shrapnel or high explosive shell, which offer little or no damage from gas; only flying particles. The fine powder not only affected the respiratory organs, but caused sneezing, involving such deep abdominal muscles as to provoke vomiting. The

evident purpose was to prevent the soldier from adjusting his mask or force him to remove it, if adjusted, only to be poisoned by the sneezing stuff (in great concentration) or by other gases which were discharged in the same area simultaneously.

Skin and Lung Corroding Chemicals

As already noted, the use of gas shell in their development gave wide range in employment of toxic substances in this chemical game of hide-and-seek. Poisonous liquids which would evolve a vapor from 3 to 6.6 times as heavy as the air were employed. The liquids, or their mists, coming into contact with the skin, as the hands or the neck, would produce blisters and mean sores. Coming into contact with rubber, of which parts of the masks are composed, some of them render the rubber brittle and the mask becomes useless. Absorbed in the clothing they penetrate to the skin, or may continue evolving poisonous fumes for a day or more. These liquids also wet the soil with which they come into contact. A soldier leaning against a sand bag, or sitting on the ground so wetted may thus unconsciously become affected.

One of these substances, of which there has been more or less publicity in the press, is called "mustard gas." It is not in fact a gas at all, nor is it the real mustard oil,

but a liquid (B B dichlorodiethyl sulphide), which gives off a vapor over five times as heavy as the air, with a faint garlic-like odor. It is very characteristic in its action, its immediate effects being slight, with serious after-effects. In efforts to disguise its odor, in some cases a little prussic acid gas was mixed in; in other cases a solid (trioxymethylene) was added. Some shells were marked with a yellow cross and called "yellow cross" shell. They contain "diphosgene" (trichloromethylchloroformate) mixed in varying proportions with chlorpicrin (nitrochloroform) or other lachrymators. Soldiers were thus intended to weep at their own funerals.

Red Cross Shell

We have seen that the Germans devised different types of shell, containing weeping, or sneezing, or toxic substances. And we have seen that Kultur chose to designate some of them with the Cross—blue, yellow, and green crosses. The climax of sardonic humor was reached when the Cross was further desecrated by applying the Red Cross as the sign on shell which contained a lachrymator, a sternutator, and a powerful poison as well. Perhaps these were really intended for the women, children, and infirm far behind the lines, for they too, even in the schools, are provided with protective means in France.

The amount of "gas" which may be sent over in the "shell" is limited and calls for an enormous number of shell in any extended action. It is reported that the Germans sent over one million gas shell within thirty days in a certain sector. It is not inconceivable that the same number might be sent over to them in one day and be *continued* for thirty days or longer—what a stench scarred Germany would evolve!! These are not nice words; they do not express sweet thoughts, but it's the only spirit in which to fight such Godless vandals.

Research in Gas Warfare

Each of the substances mentioned and others used by the Hun, which have not been referred to, has its own characteristic physiological action that is taken advantage of in tactical application, involving primarily surprise. All that is known to us is what has been learned through prodigious researches of the chemists of the Allies and from captured documents. No hint as to retaliatory reprisals can appear, but some reference to

means of defense evolved from elaborate researches may in part be disclosed. In bringing that phase of the subject to the attention of the reader it may not be amiss to say that it is an ill toxic substance that brings no good. Gaseous prussic acid has salvaged many fruit crops and rid many abodes and warehouses of cholera-carrying rats. So these toxic agents have in a measure rid many of the trenches of rats. Perhaps they may even yet rid the soldier, his dug-outs, rest billets, etc., of the "cooties."

When the inside history of the various phases of research in gas warfare, defensive and offensive, shall have been written, it will prove to be a document that would have caused Jules Verne to turn green with envy.

Gas Defense

The heinous action of the Germans in using poison gases in contravention to all agreements naturally found the Allies unprepared for such criminal procedure. Reference has already been made to the make-shift steps taken at first to meet the emergency. Once, however, it was recognized that the Germans meant to pursue such practices with utter abandon and apparently without restriction, the chemists of the Allies set about formulating the fundamental principles involved in the protection of troops against enemy gas attacks and the various procurement bureaux sought to provide the necessary equipment for each individual, for it had to assume a personal nature. This resolved itself, first, in nullification, or purification, of the contaminated air the soldier was to breathe; and second, into elimination of accumulated gas in trenches, dug-outs, or topographic depressions in which the heavy poisonous air might accumulate.

In regard to the latter it is highly desirable to prevent the ingress of the gas. Such is quite out of the question in open trenches and valleys, but well-constructed dug-outs may be and are battened down with heavy blankets, which are kept wet, usually with solutions of chemicals. The Germans sprinkled chloride of lime, or sprayed a water solution of that chemical, in trenches contaminated with "mustard gas." This phase of the problem resolved itself into a matter of ventilation. The contaminated atmosphere is removed by creating air currents by means of fires, or better by fanning or shovelling the air out of the trenches with large canvas fans or paddles—a suggestion of Lady Ayrton, who is a prominent

physicist, as was also her late husband.

The efficiency of the ventilation is closely associated with the question of concentration of the contaminating gas and the specific physiological action of the toxic agent employed. All poisons are harmless when in extreme dilution. The first dose under considerable dilution may exert decided physiological action. The familiar events incident to the first cigar illustrate this. An individual becomes in time more or less immune, or partially so, as we know from the number of cigars smoked per day by many men. So the soldier in time may become more or less immune to weak poisons and is not disturbed by breathing them. We have thousands of instances of this daily among workmen in chemical factories. If we accumulate all the nicotine, tarry matters, and other products of combustion or solution from the ten cigars an inveterate smoker burns in a day and give it to him in one dose, down he goes. So it is with gas warfare.

Again there are certain poisons, as phosphorus, lead and carbon monoxide (a constituent of ordinary illuminating gas) which produce no serious lasting effects from one dose, even fairly concentrated; but if the doses be repeated, even when very dilute, the poison, or its effects, accumulate with an inevitable result. Some of these war gases act in this way. So as perfect elimination as possible of the toxic agent from the trenches, or other places to be occupied by troops, is of prime importance.

Gas Masks

The purification of the air one is to breathe under such conditions of contamination involves filtration, which will remove by physical or chemical means those substances which affect deleteriously the lungs or eyes, or both. The filtering medium must protect against any concentration of the harmful substance liable to be met in the field, inclusive of unknown agents, which might be used by the enemy. The contrivance must fit so snugly that no air can enter except by passing through the filtering medium. It must be so constructed that it may be put on and adjusted in less than six seconds.

The filtering device (respirator) should be "fool proof" and not get out of order under the conditions of trench or open warfare. Its adjustment must be so simple that the uneducated soldier, or a child, can learn to use it quickly and properly. For the soldier its weight should be reduced to the minimum

and its design such that his movements may be incommoded as little as possible. That was not an easy job for the researcher. In fact, he has not yet secured all the desiderata, but at least he has provided a mask which protects, saves lives and still presents a fighting man active and vigorous, harmless amidst all the German gas, but his burden is great. So far the remarkable million athletes in the line in France and other countries from our country have been of such superior physique that they have borne the extra burden, but not without discomfort. It is no criticism of our bed-fellow Allies to say that the first million the United States put into the field in France was the finest body of men, physically and morally, ever collected for war purposes in the history of the world, because we had the benefit of the experience of all nations to guide us, a wonderful virile people to draw from, and the fundamental principle of democracy to rely upon in its construction. Withal, we were crude soldiers, to be sure, as we had not the experience. However, we had the material; our medical men knew how to conserve it; we were able to feed it right; our Allies taught eager students ways of *modern* fighting only.

All the air breathed is taken in through the mouth. The nostrils are closed with a mechanical device, else a defect in the fabric of the mask, perhaps a hole or rip produced in the rough handling incident to front line service, might allow the breathing of unfiltered air. The inspired air is drawn through a canister, containing certain chemicals which absorb, destroy, or neutralize the toxic agents. It then passes through a flexible tube and mouthpiece very similar to the mouthpiece of a football noseguard. The expired air passes out through a valve, which automatically closes during inspiration.

It has long been known that charcoal absorbs various gases to different degrees. The absorptive value depends upon the character of the carbon and the means by which the charcoal is produced. Pure research on the rare gases of the atmosphere some years ago showed that charcoal made from cocoanut shells possessed unusual absorptive values. So charcoal is made from cocoanut shells, the seed of peaches and apricots, as well as ivory nut, then granulated to definite sizes and mixed with granules of especially prepared chemicals, which react with the objectionable gases, in proportions that have been carefully determined. This mixture is

placed in specially designed canisters (filters), which are attached to the flexible intake tube referred to. The masks are provided with non-shattering goggles, so constructed as not to be dimmed by condensing moisture from a perspiring face and providing considerable freedom of vision that the soldier may use his rifle or attend his duties, if he be in the artillery, for example.

The efficiency of any filter depends upon the fineness of the pores of the filtering medium. Chemical action, which is partly essential in destroying the toxic bodies, depends upon intimacy of contact of the agents involved. So the smaller the pores, all other matters being equal, the purer is the air breathed. These interstices, however, may be so small as to place too heavy a burden upon the breathing apparatus of the individual, so the soldier gets insufficient air, especially under the active physical exertion during a battle. That means the production of incomplete oxidation products in the body, which, as they accumulate, induce abnormal fatigue, that is to be avoided. Good solutions, if not the ideal, have been worked out by our chemists and physiologists, so one may understand what is really going on when he observes, in certain places in the United States, a group of soldiers, disguised with gas masks to resemble ant-eaters, engaging in a double quick or playing a game of baseball in such array. The game is complete in every particular, with umpires and side-

line coaches, for officers must wear the masks and give commands; the signal corps and others using the telephone must also have their protection.

Protection of Animals

In the prosecution of the researches, in both offensive and defensive gas warfare, it has of course been necessary to make many animal experiments. These had to do not only with human beings, but were concerned as well with the conservation of our so-called dumb allies, horses, mules, donkeys, carrier pigeons, and dogs. It appears only necessary to protect horses and mules from the toxic agents; dogs and carrier pigeons must also be protected from tear gases. All have been provided for with special masks. The mule takes less kindly to the new accouterment than the others. The donkey is more amenable, for the "California Canary" having involuntarily ceased to sing is docile enough.

No such disaster as that experienced by the Canadians and Turcos at Ypres, the Russians in the Carpathians, or the Italians near Trieste menaces our fine boys or the Allies anywhere now. Many, many thousands of these protective agencies—ample—are being made, inspected with the utmost care daily, and are being sent "over there."

The production goes forward; the researches must continue. These researches have so far served well to correct the abuse of research indulged in by the Germans.



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A GAS-MASK DRILL BY UNITED STATES MARINES IN FRANCE
(Our troops have learned the knack of attaching the masks in record time)

RUSSIA AND GERMAN POLICY

BY LOTHROP STODDARD

GERMAN policy in Russia is the traditional attitude of a strong, unscrupulous power towards a weak and distracted neighbor. Germany is seeking to extract the maximum benefit from Russia's present misfortunes and so to shape the course of events that Russian reconstruction shall inure to her lasting profit.

Russia's collapse is complete. It is not merely political, but economic and social as well. Of course this collapse will not be lasting. The Russians possess too much virility and innate capacity for that, and their present bitter schooling is probably the very thing needed to promote a new and better national evolution. The great question is whether this evolution shall take place freely in accordance with the Russian genius or whether it is to be checked and perverted by foreign influences.

Let us now briefly examine this collapse under its three main aspects—political, social, and economic, in order to obtain a clear idea of the situation out of which German statesmanship is striving to fashion a new Russia molded according to the wishes of Potsdam.

Political Disruption

Politically, the old Russian Empire was a military despotism blindly obeying arbitrary commands imposed from above without the least regard for the wishes of the governed. This gave it a certain power, but it was the power of a steam boiler with the safety-valve clamped down. When the exploding point was reached the massive machine blew up and fell to earth in hopeless ruin. Then, out of the debris, all the subject nationalities rose clamoring for local autonomy

or absolute independence. Even the Russians were caught by this spirit of revolt against centralizing despotism, as was shown by the autonomist movement in Siberia and by the numerous mushroom "republics" like that of Kronstadt. With the exception of Siberia, where the demand for self-government expressed a long-felt want, these disruptive phenomena among the true Russian populations denoted only a passing phase of protest against the oppressive past. But with the non-Russian nationalities separatism was a dominant force which has already wrought momentous changes and which is unquestionably destined to cause other no less important developments. The Russian Revolution is less than eighteen months old, yet



SPHERES OF GERMAN ACTIVITY IN FORMER RUSSIAN TERRITORY

we see native governments established in all the non-Russian regions and maintaining themselves either through their own efforts or with foreign aid. Finland, the Baltic Provinces, Lithuania, Poland, Ukraina, the Tartar State of the Crimea, and Transcaucasia, are to-day upon the map, and some of these new political organisms bid fair to survive.

Social Chaos

So much for the political aspect of the Russian upheaval. But the Russian Revolution was a social as well as a political event. In Russia proper, indeed, it was almost purely of a social character, and no sooner was Czarism overthrown than a class-struggle began, ending in the triumph of the peasants and town proletariat over the relatively small upper and middle classes. The symbol of that triumph is the present Bolshevik government established at the close of the year 1917. Bolshevism is something quite new in man's political experience. It denies democracy, nationality and the state, substituting therefor the absolute domination of the proletariat ruling exclusively according to its class interests and exercising its power through a loose federation of labor "locals."

Economic Collapse

The third main aspect of the Revolution is the utter disruption of Russia's economic fabric. This disruption commenced long before the Revolution. From the beginning of the war in 1914, Russia became virtually a hermit nation, German control of the Baltic and Black Seas closing Russia's two main gateways to the outer world. Being a predominantly agricultural country, the strain of expanding her rudimentary industrial plant to meet her colossal war necessities proved beyond Russia's strength and disorganized her whole internal economy. The social revolution has now converted this disorganization into complete collapse.

The Treaty of Brest-Litovsk

Such was the situation which confronted the German Government in its efforts to formulate a new Russian policy. Let us now see how Germany has endeavored to turn that situation to her best account. The outstanding feature of the new Bolshevik régime, so far as Germany was concerned, was the Bolsheviks' desire to get Russia out of the European War. Not that the Bolsheviks were "pacifists" in the ordinary sense

of the word. On the contrary, their dream was the violent establishment of the social revolution throughout the whole world. But they felt that present peace with the foreign foe was necessary in order to concentrate their energies upon the crushing of domestic enemies and the perfecting of the new social order at home. Accordingly there was soon seen the extraordinary spectacle of the champions of the social revolution and of military autocracy meeting in a conference which terminated with the signing of the Treaty of Brest-Litovsk on March 3, 1918.

By this treaty (which included not only Germany but her allies, Austria-Hungary, Bulgaria and Turkey as well) the Bolshevik government renounced all the territorial conquests which Russia had made in Europe and Hither Asia since the middle of the 17th Century. With one stroke of the pen the broad band of non-Russian peoples stretching from Finland on the Baltic to Transcaucasia on the Black and Caspian Seas was declared no longer subject to Russian sovereignty. These territories possessed in the aggregate an area of 700,000 square miles with a population of 66,000,000 souls. Furthermore, the Bolshevik government agreed to leave the ultimate disposition of these territories to the decision of Germany and her allies and pledged itself not to conduct any agitation or propaganda in these territories against the Central Powers or such local governments as the Central Powers might there recognize. In fact, the Bolshevik government specifically pledged itself to recognize the existing governments of Ukraina and Finland. Lastly, in a series of annexes to the treaty, general stipulations were formulated for the rapid and complete reestablishment of economic relations between Russia and the Central Powers, details to be worked out by special commissions in the near future.

Of course the "Peace" of Brest-Litovsk was no peace. It was merely a provisional deal between enemies for the attainment of specific ends. Both parties realized perfectly well that Bolshevism and Prussianism could not permanently live cheek by jowl. But both parties had made up their minds that, for the moment at least, they had better stop fighting each other. The Bolsheviks, as already stated, desired peace with Germany in order to consolidate their power at home and prepare the world-revolution. The Germans wanted to abolish their eastern front in order to concentrate against their enemies in the west. They also had their scheme re-

garding Russia; a scheme patently dangerous yet subtly bold and not impossible of success. Briefly put, the German scheme was to divide the former Russian Empire into two spheres in which Germany should play two diametrically opposite rôles. Russia proper was to be handed over to Bolshevism. In fact, the Bolsheviks were to be deliberately encouraged to do their worst, the theory being that Russia's ultimate ruin would be so complete that all persons save the very dregs of society would at last welcome Prussian order as a heaven-sent deliverance from a hell of anarchy and misery. On the other hand, in the non-Russian border regions handed over to German control by the Brest-Litovsk treaty, Germany would pose as the champion of order, support the propertied classes, put down social unrest, and build up national state organizations dependent upon Germany yet sufficiently strong and self-conscious to assert themselves at any peace conference which might close the war.

The hollowness of the Brest-Litovsk treaty is proved by the way both parties have violated its stipulations. The Bolshevik government has constantly endeavored to stir up revolutionary ferment in the non-Russian territories, while Germany has flooded Russia with propaganda radiating from the German embassy at Moscow. The recent assassination of that arch-schemer Count Mirbach, the German ambassador, well termed "Germany's master-spider," reveals Russian resentment at these Teutonic practises.

As regards Germany's efforts in the regions handed over to her control by the Brest-Litovsk treaty, a detailed survey will best explain their significance.

Finland's Revolutions

Beginning our survey with Finland, we find a chain of circumstances typical of other portions of this field. The fall of Czarism in March, 1917, produced an explosion of long-suppressed nationalist feeling. A Finnish provisional government was promptly set up which first declared Finnish autonomy and later on, when the extent of Russia's collapse became evident, proclaimed full independence. So far the provisional government had the backing of virtually the entire population. But the increasing radicalism of the Russian Revolution was reacting on Finland, and now that nationalist aspirations were satisfied, class grievances began to set the various social elements by the ears. The Bolshevik revolution at the close of 1917

precipitated a corresponding crisis in Finland. The radical workingmen of the towns, aided by the large Russian garrisons quartered in Finland, set up the so-called "Red Guard" government at Helsingfors, the Finnish capital, and attempted to put through the social revolution. But against this radical menace the strong conservative elements in Finland joined forces, formed a "White Guard" government, and started a civil war. The Red Guards appealed to the Bolshevik government of Russia, the White Guards to Germany, and both responded to the call. Then came the Brest-Litovsk treaty of March 3, 1918, wherein the Bolsheviks signed away Russia's sovereignty over Finland and promised to recognize the White Guard régime.

On March 8, a peace treaty was signed between the White Guard government and Germany by the provisions of which Finland became virtually a German protectorate. Large bodies of German troops now entered Finland, the Red Guards were crushed, and the conservative White Guard régime was firmly established. German control has recently been greatly strengthened by a supplementary commercial treaty which hands Finland over to German economic penetration. There are also rumors of a secret military agreement putting the whole armed strength of Finland entirely at Germany's disposal. Germany seems to be meditating the erection of Finland into a kingdom with a German prince on the throne. She is also whetting the appetites of Finnish imperialists by ambitious schemes of a "Greater Finland" carved out of adjacent Russian provinces including a strip of ice-free seacoast on the Arctic Ocean.

Baltic Provinces, Lithuania, and Poland

Regarding the regions lying immediately between Russia proper and Germany (Baltic Provinces, Lithuania and Poland) comparatively little need be said. Nearly all these territories fell under German control at the time of the great Teutonic drive of 1915. They were thereby cut off from the main stream of Russian political life and thus did not directly experience the momentous crises which shook the remainder of the former Czarist Empire. Needless to state, German rule in the Baltic Provinces, Lithuania and Poland has been strong-handed, and all revolutionary tendencies have been sternly repressed. In Poland, Germany has shown some deference to nationalist sentiment by establishing a civil government composed of

carefully hand-picked Poles, but ultimate power, of course, resides with the German military authorities. As in the other non-Russian regions, Germany has posed as the friend of the upper and middle classes, and since these classes have become seriously alarmed by the triumph of Bolshevism in nearby Russia this pose has apparently met with some success.

The Ukraine

Turning now to the Ukraine, we encounter a situation in many ways analogous to that of Finland. As in Finland, the fall of Czardom caused a nationalist explosion and the establishment of a native provisional government, the so-called Ukrainian "Rada," at the chief Ukrainian city, Kiev. The Rada at first commanded the support of the entire Ukrainian population throughout South Russia, but the revolutionary leaven from the north soon began troubling nationalist harmony with the stirrings of class discord. The Rada had been from the first an upper-class organization, so when the Bolsheviks came to power in Petrograd at the close of 1917, they began openly to plan the overthrow of this "bourgeois" obstacle to their revolutionary projects for the Russian southlands.

It was at this critical moment that the Ukrainian Rada, like the White Guard government of Finland, turned to the Teutonic Empires for aid against the menace of revolutionary socialism. Its overtures having been well received, the Rada proceeded to send delegates to the peace conference then opening at Brest-Litovsk between the Bolshevik government of Russia and the Central Powers. The Bolshevik government was much annoyed at the appearance of this Ukrainian delegation and did its best to obtain its exclusion, but the plenipotentiaries of the Central Powers received the Ukrainians with open arms, and on February 9, 1918, a peace treaty was signed between the Central Powers and the Ukrainian Rada. By this treaty the Teutonic Empires obtained very valuable economic concessions enabling them to tap the rich agricultural resources of the Ukraine, while the Rada gained from the Central Powers recognition as a sovereign state—an act which the Bolshevik government of Russia was soon compelled to confirm by its own recognition of Ukraina in the main Brest-Litovsk treaty of March 3. Despite this formal recognition, however, the Bolsheviks continued to support the growing revolutionary ferment in Ukraina, where-

upon the Teutonic Empires sent in their armies and overran the whole country. But Germany's tenure of Ukraina is not so secure as that of Finland. The conservative elements on which Germany relies are not so strong, and there is much chronic unrest kept down only by the lavish use of German troops.

Rumania's Surrender

The Brest-Litovsk settlement meant something more than Russia's retirement from the war. It also signified Rumania's withdrawal. When, in the autumn of 1916, this small Balkan nation had entered the war on the Allied side, it had been in the belief that Russia would stick to the end. But now that Russia had quit, Rumania was left absolutely "in the air," and could do nothing but capitulate. Accordingly, on March 5, 1918, only two days after the Brest-Litovsk treaty, a preliminary peace agreement was signed at Buften near Bucharest between Rumania and the Central Powers, and this instrument was supplemented by a much more elaborate treaty signed on May 7. No harsher terms were ever imposed than those which Rumania was forced to accept. It is not too much to say that, while Rumania kept the technical status of sovereignty, she really ceased to be an independent state. Rumania was compelled to cede her strategic western frontier to Austria-Hungary, thus laying herself absolutely at the mercy of her mighty neighbor. She also had to cede the Dobrudja, her sole outlet to the Black Sea, thereby becoming a landlocked nation. And this was only the beginning; for Rumania was not even left the mistress of her own house. The Central Powers obtained practically perpetual control over Rumania's whole economic life. The "surplus" of her rich harvests was promised to the Central Powers during 1918 and 1919, and for seven years thereafter if the Central Powers so desired. Over her great oil fields Rumania lost all control. The oil fields were turned over to an Austro-German holding company with a ninety-years' lease and a free hand regarding both production and export. The company's monopoly was to be absolute, all foreign holdings to be expropriated. Similar controls were granted over the other sinews of Rumanian economic life, such as railroads, harbors, etc. The enforcement of these treaty stipulations was to be guaranteed by the presence of a Teutonic army of occupation consisting of at least six divisions and as

many more as were "required by economic necessities," all kept at Rumania's expense.

Germany's Designs on the Near East

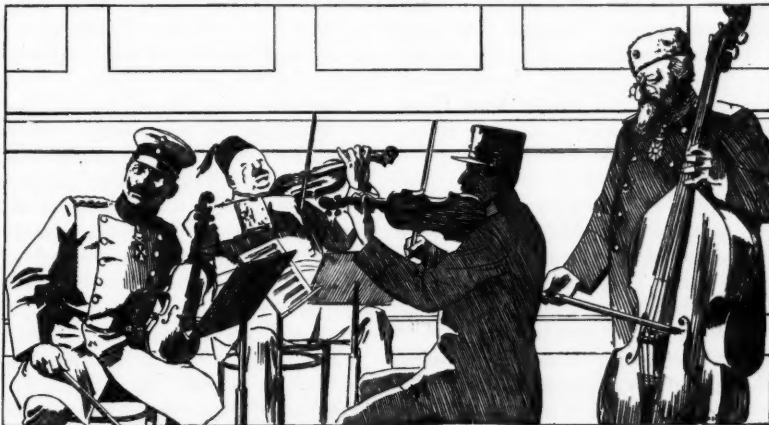
This virtual extinction of Rumania as an independent state greatly facilitated Germany's military occupation of the Ukraine already mentioned. It also paved the way for still more ambitious Teutonic moves. The nature of German action in South Russia and the Black Sea basin during the last few months proves conclusively that Germany regards the Ukraine as a mere stepping-stone towards the Near and Middle East. In the early summer of the present year German troops traversed the entire Ukraine and reached the Crimean Peninsula, where the native Tartar population had proclaimed its independence, refused to recognize Ukrainian claims to sovereignty, and displayed a wish to revive the old connection of the Crimea with the Ottoman Empire. Germany is also apparently meditating a military occupation of Transcaucasia. Here the native Christian races (Georgians and Armenians) are combating the Turks, who desire to possess the country, while holding down the native Tartar minority, which, as in the Crimea, is pro-Turkish. The German's game in both these regions seems to be to play off local rivals and finally to seat himself as arbiter and master. Should Germany succeed in establishing herself in Transcaucasia she would stand on the threshold of the Middle East, for just beyond lies Persia, while beyond Persia are Afghanistan and India. That Germany entertains far-

reaching Middle Eastern designs seems clear from a clause in the Brest-Litovsk treaty whereby the Bolshevik government renounced all Russia's special rights and claims in Persia and Afghanistan.

Such, briefly sketched, are the German plans regarding Russia and the adjacent East. Daring in conception, grandiose in scope, and displaying an indubitable knowledge of local conditions, they yet exhibit a disregard for the deeper moral factors which presages ultimate failure despite temporary success. In fact, the Teutonic Empire of 1918 wears the same air of theatrical unreality as did the Napoleonic Empire of 1811—just before the Moscow campaign.

Furthermore, such a battering as the Teuton is now dealing the Slav world is risky business—it is likely to provoke correspondingly intense reactions recoiling terribly upon the conqueror. The Teutonic nightmare which hung over France from 1870 to 1914 was, in a sense, the logical result of French maltreatment of divided Germany during the Revolutionary and Napoleonic Wars. Also, Prussian autocracy's coddling of Bolshevism, however clever for the moment, may finally bring revolutionary chickens home to roost.

One thing, however, is certain: the whole tissue of "treaties" negotiated between the Central Powers and their eastern neighbors since the beginning of 1918 constitutes a gross violation of all the principles for which we are fighting and upon which alone a better world-order may be established. Before any healthy peace settlement can be reached, they must be converted into "scraps of paper."



SOMEWHAT OUT OF TUNE

FIRST FIDDLE WILHELM: "What do I hear? Discord???" [This "discord" among the Central Powers has a direct bearing on the outcome of German policy as discussed in the foregoing article.]

From *De Amsterdammer* (Amsterdam)

PORTO RICO IN THE WAR

BY EMILIO J. PASARELL

SINCE the United States entered the war, Porto Rico has in every way shown a spirit of loyalty and self-sacrifice that measures up to the highest degree of patriotism displayed anywhere in America.

Notwithstanding the economic crisis that the country is undergoing, due to difficulties in shipping and allotment of tonnage, money has been invested in the Liberty Loans and donated liberally to different organizations.

The whole island is wide awake, and every citizen is backing the Allies in this crisis that has threatened to overthrow civilization and humanity.

Food Economy Campaign

The Insular Food Commission created by the Porto Rican Legislature long before we entered the war and the United States Food Administration have been coöperating efficiently in the control of prices and exportation of food.

One of the most significant results attained is the wonderful increase in cultivated acreage. Beans, rice, corn, and sweet potatoes are the principal crops which have been improved. Land devoted to these staples has been more than doubled.

It is interesting to note that in several localities where sugar-cane and tobacco were raised the land is now ploughed for vegetables. The prospective crops of minor fruit—especially the banana species—are most promising, and we expect that there will be over 100,000 acres producing them.

The Liberty Loan

When the First Liberty Loan was offered, Porto Ricans were not widely informed as to details and meaning. It was not so with the Second and Third Liberty Loans. Through Governor Yager's initiative a campaign was prepared that ended happily.

In the Third Liberty Loan twenty-nine municipalities out of seventy-six won the flag, although the island fell slightly short in its quota of \$3,000,000.

The people gradually realized what these loans represented to the cause of democracy.

In the First Liberty Loan only \$502,500 was subscribed, as compared with \$1,986,900 for the second loan and \$2,783,050 for the third. Subscribers to the number of 4877 bought the second loan, and 8714 bought the third.

The Red Cross

With the sinking of the *Carolina* on her way from Porto Rico to New York, some 63,000 bandages made by the women of the island went to the bottom of the sea.

During the past few weeks there has been carried on a drive for membership and contributions to the Red Cross. About 50,000 members and \$110,000 in money resulted.

Parades and garden-parties showing the spirit of Porto Rico have been organized in almost every city or town. In all of them enthusiasm and generosity were conspicuous.

Military Preparation

When war was declared on Germany and the United States Army was expanded, the Porto Rico Regiment was the first in the whole nation to be at full war strength. Six hundred and forty volunteers were accepted, and immediately it was selected for duty in guarding the Panama Canal.

Soon after the Selective Draft Law was passed, 110,000 young Porto Ricans were registered, of whom 13,000 have been inducted to Camp Las Casas, and 15,000 more called for service.

Facilities were offered by the Government at Washington for young and ambitious Porto Ricans to be commissioned in the Reserve Corps. The first training camp was composed of 250 white men, of whom 180 were commissioned as captains and first and second lieutenants. The second camp contained 300 white men and 100 colored men; and 247 obtained commissions. At a third camp, 600 men are being instructed.

The people of Porto Rico have had domestic burdens to bear. In spite of all, however, they have supported the government at Washington with faithfulness, giving all they have—men and wealth, good-will and effort—to win the war for democracy.

SAVE COAL AND SAVE HEALTH!

BY PROFESSOR ELLSWORTH HUNTINGTON
OF YALE UNIVERSITY

(Approved by the United States Fuel Administration)

Less Coal, Fewer Colds
Less Fuel, Fewer Deaths
Burn Less, Bury Less.

SAVE coal and you will save money. It is easy to see how that will happen in these days of high prices. Save coal and you will save liberty. It is also easy to see how our fight for liberty will be helped if the coal bins of our factories, railways, and steamships are kept full. Save coal and you will save health. Can this be true? Will not our saving of coal be at the expense of health?

On the contrary, the shortage of coal will actually improve our health. With better health we shall have fewer doctor's bills. That will not only mean a saving of money for ourselves, but will leave the doctors more free for war service. It will have still another great advantage. It will give the whole country greater strength to put into the work of winning the war.

MODERATE TEMPERATURES, WITH MOISTURE, HEALTHFUL

Do you doubt this? Then consider these three facts:

1. *An average temperature of 64 degrees is the best for the human race.*

2. *Moist air is more healthful than dry, provided it is not too warm. Such air feels warmer than dry air at the same temperature and retains its heat longer.*

3. *Variations of temperature are much more healthful than a uniform temperature. As a means of preserving health few things are better than a frequent fall of temperature followed by a more gradual rise.*

But how do we know that these things are true? They sound quite contrary to some of our common beliefs. We know they are true because they are proved by the study

of deaths by the million, and by measurements of the work of factory operatives and students by the thousand.

In order to find out the exact effect of temperature and humidity upon health I have recently made an intensive study of about nine million deaths in all parts of the United States and in France, Italy, and Japan. I have supplemented this by a less intensive study of over fifty million deaths in Belgium, Britain, Germany, Russia, Rumania, Bulgaria, Spain, Sweden, and other countries. Some sixty million deaths have thus been investigated. They all lead to the same conclusions. Sixty millions is an enormous number. Our personal impressions are of little value compared with such a vast body of absolute facts. Even if the facts lead to conclusions quite contrary to our general beliefs, we must accept them and act upon them, for the official records of deaths and of the weather cannot be set aside. Moreover the three conclusions mentioned above are supported not only by the study of deaths, but by an investigation of the work of factory operatives and students.

AT WHAT TEMPERATURE IS MAN AT HIS BEST?

Let us consider temperatures for a moment. Scientists have discovered that every living creature, whether it be plant, animal, or man, has what is technically called an optimum temperature. This simply means a temperature at which it is at its best. Above or below this temperature an animal, for instance, cannot run so fast, digest its food so well, nor fight so vigorously as when the thermometer is at this particular point. Different activities, however, may be at their best at different temperatures. Thus in man the optimum or best temperature for physical activity is 63 or 64 degrees F., while for

mental activity the optimum is much lower—perhaps as low as 40 degrees and quite surely not above 50 degrees. Thus in order that both our minds and bodies may be in the best possible condition we need to live in air that *averages* as low as 40 degrees part of the year and as high as 64 degrees at other times.

SUMMER HEAT MORE FATAL THAN WINTER'S COLD

An average temperature of 40 degrees means that there may be a frost at night, while by day the thermometer rises toward 50 degrees. An average of 63 degrees or 64 degrees for day and night means a range from about 55 degrees to a trifle above 70 degrees.

How are we to get these ideal conditions? In summer we cannot get them because we have not yet learned to cool our houses. The summer heat takes a terrible toll of lives. In New York City, for example, during the period from 1900 to 1915 the death-rate in July during the two years when that month was warmest was about 30 per cent. greater than during the year when that month was coolest. The two warmest months averaged 78 degrees, and the coolest 71 degrees. During the remaining years the death-rate varied almost exactly in harmony with the temperature.

YET WINTER DEATH-RATE HIGHER BECAUSE OF ARTIFICIAL CONDITIONS

In winter, when we control the temperature within our houses, we ought to be able to live under ideal conditions. We certainly do no such thing. In large parts of the United States the death-rate in winter is even greater than in mid-summer. This is not due to the cold outside air nearly so much as to wrong conditions inside the house. The wrong conditions are, first, too high a temperature; second, too much dryness of the air; and third, too little variation of temperature.

Let us look at these three conditions. The millions of deaths already referred to, show that for practically all races the same temperature, 63 or 64 degrees, is the best. Strange as it may seem, the Finns, for example, in their cold northern home have not become adapted to low temperature. As the air grows warmer during the summer their health becomes better and better. Even their summers, however, are not quite warm enough, for only rarely does July average

as high as 64 degrees. Far away to the south, on the other hand, the people of sunny Sicily, where the temperature averages above 64 degrees much of the time, have not become adapted to a warm climate. For both Finns and Sicilians the same temperature is best. Even the American negroes show almost no adaptation to a hot climate. For thousands of years their ancestors lived in a climate where the thermometer averages not far from 80 degrees. Yet to-day in our Southern States the health of the colored people is best when the temperature averages not higher than 68 degrees and perhaps lower. Thus all races are almost alike.

FORTY TO FIFTY DEGREES AS A NIGHT TEMPERATURE

In order that people may enjoy ideal conditions of bodily health and of mental activity, they ought during the winter to sleep with open windows and in a temperature ranging from about freezing up to 40 degrees or 50 degrees. If rooms are used only for sleeping, there is no necessity of warming them above 50 degrees, at any time of day. Of course people must be well covered at night. They should use warming pans or footstoves rather than suffer from the cold. Nevertheless it is decidedly good for people to dress and undress in a temperature of 40 to 50 degrees provided they do so actively and quickly enough so that they do not become chilled.

SIXTY-THREE DEGREES FOR LIVING AND WORKING ROOMS

The next requisite for health, so far as temperature is concerned, is that the rooms where people live and work should average about 63 or 64 degrees. During the part of the year when such temperatures prevail out of doors we get up in the morning and eat breakfast with a temperature of about 60 degrees. By noon the temperature rises to about 70 degrees. Toward sunset it is perhaps 64 degrees, and by bedtime it is down to 60 degrees. All day we are perfectly comfortable. We do not feel the need of a fire either in the morning or the evening. We feel as if we could accomplish almost anything. Watch the thermometer during some of the most delightful September days, and see how comfortable you feel when the thermometer is about 60 degrees at breakfast time and 70 degrees at noon.

If we are able to enjoy such temperatures in the autumn, why do we object to them

in winter? On a zero day we come down to breakfast and find the thermometer at 60 degrees. We begin to grumble about the furnace and its caretaker; someone goes down cellar and rattles the dampers; and we sit down to breakfast cross and chilly. By noon the thermometer has risen to 68 degrees, but we still feel chilly, especially the old people. There seem to be drafts everywhere, and everyone is in danger of catching cold. Since everyone knows that this sort of thing happens, what is the sense in saying that people ought to keep their houses at an average temperature of 64 degrees in winter?

EFFECT OF HUMIDITY

The answer lies in the conditions of humidity and variability. We feel cold with a temperature of 60 degrees on a winter morning and not on an autumn morning because the winter air is very dry. Climatologists talk about "actual" temperature and "sensible" temperature. By "sensible" temperature they mean the effect which the air has on the skin. The sensible temperature of dry air is always lower than that of moist air which appears to have the same amount of heat according to the thermometer. This is true even in winter. Our impression to the contrary is due largely to the fact that in the eastern United States winter days with high humidity are apt to be characterized by a *wind*, while the dry winter air of Minnesota, for example, is almost quiet, except when the blizzards kill man and beast. Moreover, we often confuse the effect of condensed vapor with that of uncondensed. If the winter air is so moist that it condenses on our clothing, it inevitably chills us, but that is a wholly different matter. It does not alter the fact that when the air is dry its sensible temperature is always lower than when it is wet. So true is this that *dry air at 70 degrees may feel cooler than moist air at 60 degrees*. When the outside air is brought into the house and warmed in winter, it becomes as dry as the air of deserts, even if it has been saturated with moisture at the low outside temperature. Therefore it feels cool even at 70 degrees, and every little draft causes a chill. Among the results of the study of millions of deaths none is more striking than the remarkable effect of dry air in winter: In all the regions where houses are heated in winter, the drier months show a higher death-rate than the more humid ones, even

though the temperature is identical. For instance, if we compare the dry Januaries with the more humid Januaries in New York, Chicago, San Francisco, Paris, or Rome, we find in each case that the driest months have a death-rate from 5 per cent. to 30 per cent. higher than the wettest months in the same place. This is the effect of humidity after the effects of temperature, wind, and so forth, have been eliminated.

WHEN DRY AIR IS HARMFUL

An equally strong proof of the harmful effect of dry air is found in another fact. In every one of the regions where the death-rate has been carefully compared with the weather, dry air is more harmful than wet air when the temperature is close to the ideal. In the interior of the United States, for example, when the temperature averages 64 degrees there are 10 per cent. more deaths if the relative humidity is below 40 per cent. than if it is above 70 per cent. This means that the extremely dry air of our winter houses not only makes people feel cold, but dries up the mucous membranes so that colds and all sorts of diseases become rife. Evidently the remedy for this state of affairs is to keep the air in our houses relatively cool and give it plenty of moisture. Thus we save coal, improve health, and make ourselves feel comfortable.

CHANGES OF TEMPERATURE BENEFICIAL

There is still one more aspect of the question. From the millions of deaths which we are studying it can be plainly seen that the death-rate declines decidedly under the influence of rapid changes of temperature. Take, for example, the daily deaths in New York City for a period of eight years. These show that at all seasons a rise of temperature is accompanied by a rise in the death-rate. A fall of temperature is similarly accompanied by a fall in the death-rate. This is most extraordinary. It cannot be doubted, however, for it is clear in each month and in each year. The difference in the death-rate between the days with the greatest fall and the greatest rise of temperature amounts to something like 30 per cent. in winter and 50 per cent. in summer. This means that a drop in temperature acts like a cold bath. It stimulates people, and improves their health. If the temperature remains low it is harmful, just as a cold bath is harmful if one stays in it long enough to get chilled.

Other facts show that when the temperature varies greatly from day to day, people's health is better than when there is uniformity.

In winter, according to our present system of heating, there is altogether too much uniformity of temperature rather than too little. People do their best to keep the thermometer at 68 to 70 degrees, as the case may be. Thus they weaken themselves not only by too high a temperature and by having the air too dry, but by preventing the variations which are so stimulating. Thus, as the winter goes on they become more and more sensitive to colds and to many other ailments.

EXPERIMENTS IN VENTILATION

A fine illustration of this is furnished by some experiments carried on by the New York State Ventilation Commission under the chairmanship of Professor C. E. A. Winslow, of Yale University. In about twenty schools in New York City some ninety rooms were divided into two groups. The groups differed only in their mode of ventilation. In one group the rooms were fitted with the most modern system of ventilation. The air was taken into the cellar, warmed to a temperature of about 67 degrees and blown gently into the rooms by means of fans. There were no drafts or sudden changes of temperature, and the air was always pure and wholesome. In the other case the rooms were kept at the same average temperature and humidity as in the first case, but there was no fancy system of fan ventilation. Fresh air was merely let in at frequent intervals through the windows. Thus while the two groups of rooms averaged the same in other respects, and were both supplied with plenty of fresh air, one group was subject to uniform conditions, while the other was subject to frequent variations of temperature.

What was the result of this difference in variability? From careful records kept by nurses and doctors it appears that colds and other diseases of the respiratory organs were nearly twice as frequent in the rooms with a uniform temperature as in those where there were frequent changes. This furnishes striking confirmation of the results obtained from a study of deaths. Variability of temperature keeps people in good health and enables them to resist disease.

In connection with the experiments of the New York Ventilation Commission, some figures are available as to the effect of mean

temperature. When about 120 schoolrooms were divided according to their temperature, it was found that the number of colds was least in the rooms where the average temperature came nearest to 64 degrees.

FOUR NEEDS IN HEATING HOUSES NEXT WINTER

From all these facts it appears that four things are needed in our houses next winter—four things which will save coal and improve our health and efficiency:

The first is cooler sleeping rooms, which ought not to be heated by day unless people are going to sit in them. Such rooms will act not only as a mental stimulus, but will help to give the variability which is so valuable as a means of preserving health.

Second, the rooms in which we sit, eat, work, and play ought not to average above 64 degrees. This, like the cooler sleeping rooms, will considerably diminish the demand for coal, and will at the same time improve our health. As a matter of fact, if the coal situation should demand it, there is no reason why the temperature should not average as low as 60 degrees. Indeed 56 degrees would actually do less harm than 72 degrees, which is a common temperature in many houses at present. Of course people would have to dress warmly. If they faithfully carry out the other recommendations of this article, however, they may expect better health and as great comfort at 56 degrees as at 72.

Third, in order that we may be comfortable in temperatures of 56 to 64 degrees the air in our houses must be much moister than is now commonly the case. This does not mean that it should be so damp that moisture accumulates on the walls. It does mean, however, that in almost all houses the amount of evaporation from pans in the furnace, on radiators, and in registers ought to be from three to five or even ten times as great as now. If rooms contain fairly moist air at 70 degrees they are likely to feel too warm and to be enervating. Moreover, when the rooms cool down at night moisture may be deposited on the cool walls. On the other hand with a temperature of only 60 to 64 degrees it is possible to have the air sufficiently moist to make it feel warm and comfortable, while the danger of getting the walls damp at night is much diminished. In this connection it must be remembered that moist air retains its heat much longer than dry air. Hence the amount of coal needed

to keep such air sufficiently warm is less than when the air is dry.

Fourth, if the temperature is allowed to be *variable*, it does not need to average so high as when it is kept uniform. Under such conditions people's health improves and their capacity for resistance greatly increases. Thus people who have been in the habit of wanting the thermometer at 70 degrees at breakfast time, find themselves comfortable if the temperature is only 60 degrees. Later the thermometer rises to perhaps 66 degrees and they feel too warm. Then, when the furnace cools off a little they do not mind if it goes back to 62 degrees. Thus during the day the thermometer may swing back and forth a number of times. This is beneficial to health, and also enables a house to be heated with less consumption of coal.

Last winter may be cited as an involuntary example of the improvement in health that

may come with decreased consumption of coal. In New York City, and in the East generally, the months of December and January were phenomenally cold. Ordinarily under such conditions the death-rate increases greatly. Last year, on the contrary, it was less than in the preceding years. Apparently the necessity for economy in the use of coal caused many people to adopt a part of the program which a study of the world's health seems to demand. They did not go to the full length advocated in this article but they lived in houses that were cooler and more variable than usual. Other causes doubtless played a part, but the condition of the air must have been of much importance. Another winter a wise and scientific policy on the part of the nation as a whole ought to make it possible materially to decrease the consumption of coal and at the same time appreciably improve health.

SAVE 40,000,000 TONS!

HOW TO ECONOMIZE COAL IN YOUR OWN HOME

BY GEORGE H. CUSHING

CHICAGO has a reputation for having a bad climate. I know because, having lived there for twelve years, I have been forced to meet the jibes of people from all sections. The plain facts are that, as compared with Cincinnati, St. Louis, and Philadelphia, Chicago's temperature winter and summer is, on the average, from four to six degrees lower than that of surrounding cities. Yet in winter Chicago seems colder than other places. In summer it seems vastly hotter, but it isn't according to the thermometer. The point of difference between the testimony of the senses and readings of the thermometer is that Chicago air is humid. Always the lake humidifies the air to the point of near saturation. It is, to borrow a threadbare phrase, "Not so much the heat as it is the humidity."

In this interesting fact there is something of practical value to every American this year. It will help everyone to relieve the distress incident to the coal shortage which is causing the whole world to suffer. You and I at home can be reasonably comfortable despite the coal shortage if we humidify the air in the house. That is if you live in moist air you will be as comfortable when the thermometer says your house temperature is

sixty-four as you would be at a house temperature of seventy and the air dry.

PROOF THAT DRY AIR IS COLD

Presently, I hope to tell concretely how this result may be achieved. First, I want to tell a short story which will make this seem the most reasonable of suggestions. Some years ago, Carl Scholz moved his family to Chicago, having lived previously in Arkansas, Missouri, and West Virginia. They occupied a steam-heated apartment. For the first few years, he noticed that his wife and daughter were bothered constantly by colds in winter. He noticed also that the furniture which had been sturdy and strong in other climates was falling to pieces. Being of a scientific turn of mind, he decided that the two phenomena had a common origin. He believed that the air in his apartment was too dry in winter. He attached to the back of his radiators, copper pans filled with water and with wicks extending upward into the air. He soon discovered that the air absorbed more than a quart of water per room per diem. He saw also that the house became uncomfortably warm and that the tendency to colds disappeared.

At that time, he was operating some coal

mines in Illinois and Oklahoma. There was always danger in winter that something would cause an explosion in these mines. He found that when the temperature of the outside air was from freezing down to zero, the air inside his coal mines remained always at about sixty degrees. Still to keep the mine air pure he was forced to pump that cold air into and through those warm mines. He knew that the air went in cold and dry. He discovered that it passed out warm and moist. There was no place where it could pick up moisture except inside the mine. Therefore, the air as it passed through was drinking up all the moisture in the mine. He decided that the coal dust exploded more easily in winter than in summer because it was drier at that time.

Mr. Scholz carried this information to the U. S. Bureau of Mines. It made exhaustive experiments to prove or disprove that theory and finally put out a bulletin covering the very point Mr. Scholz made. This bulletin said that literally tons and tons of water were carried out of a coal mine every day in winter because the air went in cold and came out warm.

"GIVE THE AIR A DRINK!"

Precisely the same thing is going on in your apartment or house. You must to be healthy have a change of air in your living rooms every hour. That air must come from somewhere. Naturally, you get it from the outside. So it enters the house or apartment cold and dry. If fresh air enters, the stale air must pass out. You let it out. It passes out warm or hot and moist. The only place it can get moisture is in your house or apartment. It first takes up all the moisture in the air. Not being satisfied, it attacks your skin. You feel the sensation of the moisture evaporating on your skin. You say then that you are cool or cold—the same as you do when the wind blows over you in summer. Instantly you want more heat. So, you build a bigger fire. You would get precisely the same result if you should give the air a drink out of a pan instead of off your skin.

The medical—or anatomical—experts advise that houses should be heated to only sixty-four degrees. If the air is properly moistened, the effect of that temperature will be the same as a dry heat of seventy or seventy-two. In proof of that I point to the fact that Chicago had last summer as many heat prostrations when its temperature was ninety-six, as other cities had, when their

temperatures were 102. It is not the heat alone that produces all the effect, the humidity gives the extra "kick."

ONE QUART PER ROOM PER DAY

The question is as to how to get that humidity. For house heating, there are but four heating systems—hot air (arising from the use of furnaces, stoves, or open grates); hot water, steam, and vapor systems.

When a house is heated by a stove, a pan containing water should always be on top of the stove.

When a house is heated by a hot air furnace, a pan containing water should always be in the drum where the evaporated water can pass up with the heated air through the registers.

When the house is heated with a hot water plant, a pan containing water with wicks which extend upward into the air should be hung on the back of every radiator.

When heating with either steam or vapor, there is a valve made which can be attached to the radiator to spray vapor always into the air.

The evaporation of water should never be less than one quart per room per diem. Arrangements should be made for evaporating, if necessary, as much as four quarts per room per diem, although that is extreme. Such excessive amounts are necessary only when the air is allowed to enter the room cold—say through an opening of the bottom of the window—and when the foul air is allowed to pass out at the top—say through an opening at the top of the window.

A COAL SAVING OF ONE-THIRD

The question which will arise instantly in the practical mind of the householder is: "What do I gain by all this violent changing of conditions in my house. This is going to amount to a revolution at home. It is going to be bothersome and perhaps costly to rearrange my air supply and to humidify my house. What do I save by it all."

My answer is: About one-third of the coal you now burn to keep your house hot, though dry.

Reduced to concrete terms it means: If you have been using twelve tons of anthracite at \$8 a ton, you can get along with eight tons and thus save \$32 next winter. Or, if you have been using fourteen tons of bituminous or soft coal at \$6 a ton, you could get along with ten tons and save \$24 next winter. The cost of installing the most costly

humidifiers in a house of the indicated size, would not exceed \$10. Once installed they would last for years. It is a good investment to humidify the air paying 200 per cent. at least in cash; 100 per cent. at least in saving doctors bills. Besides, it saves coal which the world needs.

The reason I say that one-third of the coal can easily be saved is because I have done it. I have seen others do it. The whole thing is the result of the use of but a little common sense applied to house heating. It merely makes water warm you—and water is cheap—instead of burning coal to do it—when coal is expensive.

To prove that to raise the temperature so little as five degrees is costly, needs strong supporting data. We all know that it is easier to walk than to run, or to travel light than to carry a load. That is so because we are built that way. The same is true of a furnace. It uses less coal to run it at the rate it was intended to run than at a much higher rate.

The fact about most house furnaces is, unfortunately, that they were installed with the idea that they would heat the house easily when the outside temperature stood at twenty degrees. The furnace builder attached draft accelerating devices—such as draft slides—to allow the fire to be “forced” to heat the house when the outside temperature stood at zero or below. “Forcing” a furnace in this way is the same to it as it would be to us to run or to carry a load. It is obvious, then, that most house-heating plants have been installed according to an entirely wrong theory. They presuppose that during protracted cold spells, coal shall be consumed at a wasteful rate. They should of course, have been big enough to heat the house easily when the outside temperature was at zero or below. If they were that large, the house owner could slow them down—by leaving ashes on the grate; by closing the damper; or by opening the check damper—when less heat was required because the outside temperature was higher.

“FORCING” THE FURNACE WASTEFUL

This is no time, however, to cry over that spilled milk. The stubborn fact is that most house furnaces are too small to heat the house comfortably in zero weather. Therefore, since we desire to be warm the furnace must be forced or we must get the same effect by humidifying the air. I advise the latter as being cheaper.

It is when the furnace is being “forced” that the waste of coal occurs. This is so for three reasons:

First, when the weather turns cold, the chances are that the velocity of the wind will increase also. Therefore, the radiation of heat through the walls and windows of the house becomes much faster than under normal conditions. That calls for an increased amount of heat inside the house and the average man is inclined to be extravagant with coal to avoid discomfort.

Second, when the weather is cold and when the wind blows strongly the draft through the fire is for both reasons stronger. This without any change of the dampers would mean that the fire would burn faster. Few men realize this fact. So they open the dampers and give the cold wind a double chance at the fire. The danger is that the heat generated by this free burning of coal will pass directly up the chimney with the draft instead of remaining in the furnace to do its work.

In hot water plants the demand for more heat in the house compels the furnace to pump the water faster through the pipes. If those pipes are small the furnace must act as a force pump, a function it was never intended to fulfill.

So the danger is that most of the heat generated by burning coal will never be felt in the house, but will pass off up the chimney and be wasted.

Third: The tendency of the average householder is to force too much air through the furnace. He goes on the theory that the stronger the draft, the hotter the fire. Therefore, he opens, it may be, the ash-pit door wide and allows the air to rush in. He says that, then, he will get enough air through the coal pile to make a good hot fire. As a matter of fact, it is easily possible to force so much air through that it will actually cool down the fire. Too much air through a furnace is far worse than not enough. Too much air wastes coal and dissipates heat. Not enough air saves coal but does not produce the desired heat. Half way between, of course, is the right idea.

HOW TO GET RESULTS FROM A HEATING PLANT

I have worked this abstruse subject over and over again in my mind until I have reduced it to what I believe is such a simple method of furnace operation that anyone can understand what I mean and can get the

same results that I have. The following is my method:

There are three points in any furnace through which the fire can easily be seen—through the ash-pit door; through the small clinker door which is immediately above the ash-pit door; and, through the larger or feed door in the front center of the furnace.

I never allow the fire to show red through the grate into the ash pit. I mean that I never shake the ashes down until the red coals are resting directly on the grate.

I always want to see, through the clinker door, a thin layer of coal—three or four inches thick—burning at a white heat. But, I always want to see above it a layer of coal burning more slowly than at a white heat.

Through the feed door, I want, generally, to see only black coal. At best I want only to see coal burning at a dull or very dark red heat.

To get these three results simultaneously, I slow down the draft until that end is reached. Then I know that the coal is being burned efficiently and that my precious coal is not being wasted.

If, when the fire is burning that way, the house is not warm enough, I do one of three things:

First, I tighten up the house by stopping air leaks or by putting on storm windows and weather strips.

Second, I humidify the air, in the ways suggested.

Third, if these methods are not sufficient, *I install another heater.*

Installing a second heater gives far better results at less expense than comes from forcing the fire in one heater. In putting on an extra heater I do not advocate an open grate. They make a room cheerful but they are terribly wasteful. To use two good heaters allows both to run slowly and efficiently. Last winter for the first time I installed a hot blast stove to help out my furnace. The result was that I have never been so comfortable, yet I had left at the end of May a ton of coal, whereas I had, in December, expected my coal piles to be exhausted by the second week in March.

BANKING THE FIRE

This slowing down of a furnace, like everything else, is a good thing which can easily be overdone. I learned three years ago to avoid the common mistake of shutting off the furnace too much at night. Nearly everyone goes on the theory that the proper way

to save coal is to slow down the fire tremendously when retiring for the night. If they heat the house in the day time to seventy degrees, they allow it to cool off to forty-five degrees or even lower at night. To insure that the fire will hold through the night, they put a layer of ashes over the fresh coal. This makes cooling of the house unavoidable.

I used that method and weighed the coal necessary to raise the temperature in the morning. Then I tried another plan and weighed the coal. I know that to bank the fire with ashes causes you to use more coal in a day than it does to maintain a steady slow fire through the night. Therefore, I never allow the house temperature at night to drop below fifty-eight or sixty degrees—preferably the latter.

After my experiments, I never use ashes for banking. It helps to start clinkers. Also it helps to kill the efforts at making the needed hot fire in the morning. Still, I bank the fire. But I use either anthracite dust or bituminous screenings or slack coal. This dust can be had by inquiring of the retailer. I never spread it entirely over the fire. Instead, I put a shovelful or maybe two in the center of the firepot thus leaving room for the air to pass up around it in a ring close to the sides of the furnace. This keeps the heat up, moderately, all through the night. By about four o'clock in the morning, this dust begins to take fire. It is generally pure coal. When it starts to burn it makes a very hot fire. Thus the house is comfortable at breakfast time and there is the best of foundations for a new fire for the day. I vastly prefer coal dust to ashes as a means of banking the fire.

FIRING BITUMINOUS COAL

Up to this point, I have treated the coal-burning question in the most general of terms. I have been going purposely on the assumption that the householder is to have the same grade of coal to burn that formerly he had. East of Pittsburgh and north of Washington that will remain largely true. In all other parts of the country our Government has been forced to undertake the terribly dangerous experiment of forcing the people to accept a kind of coal they have never burned. There was no other way out of this experiment because the coal that is now withdrawn from house use is needed for war work. Still, it is a dangerous experiment to force householders to use the other kind because there is danger that the people

will both go cold and will waste fuel because they will not know how to burn it.

To be specific, most of us have heated our houses with anthracite or the better grades of bituminous, such as Pocahontas or New River coal. Anthracite is required in the East. The better grades of bituminous are urgently needed in war work. That throws the Middle West, the South, and the West back upon the bituminous coals which burn fast and which make smoke.

When using these coals, an entirely different method of firing must be employed. They are inclined to burn faster, therefore the draft through the ash-pit door must be slowed down. They are inclined to produce smoke. Therefore, some air must be let in over the fire—preferably through the draft slide in the feed door—to allow the smoke or gases to burn. They cannot be shoveled into the furnace in quantity as is anthracite and hence be expected to burn steadily for a long time. Instead, a little coal must be shoveled into the furnace—except at night—each time and the firing must be done more often. I follow the practice of firing low-grade bituminous coal once every three hours.

Before firing any bituminous coal at all, I take a rake or poker and shove all of the live coals—everything down to the layer of ashes on the grate—to the back of the furnace. Then I dump the fresh coal in front, allowing it to rest on a layer of ashes at the bottom; against the rim of the furnace in front, and against the red coals of the fire in the rear. This tends to slow down the fire properly. Also, it tends to cause the red coals to burn the gases as they are stewed off the fresh or "green" coal.

About firing any furnace with any coal, I have found that it is wasteful to pile the coal, at any time or under any condition, higher than two or three inches above the lower level of the feed door.

THE COAL SHORTAGE AND THE PROPOSED SAVING

It must be evident that the Government would not ask people to go through all the mental gymnastics of trying to learn house humidifying and scientific firing unless there was some grave and urgent need for it. There is. That reason is that there is a world shortage of coal which only America can make good.

I wish it were possible to set down here those statistics of world need set opposite world production upon which everyone could agree. There are no such figures. Instead, I shall have to fall back upon the philosophy of a great English writer who once said that "our opinions are like our watches; none exactly right, yet each believes his own." I paraphrase that by saying that no figures are exactly right, but I prefer my own.

My calculations are that, as a result of an increasing home demand and a rapidly growing foreign demand, America is facing a need to produce about 2,600,000 tons of coal every day. We have fallen short of this mark, to date, on the average by more than 400,000 tons a day. It is true that production is increasing slowly. But it also is true that production cannot overtake the demand until another winter is past. If these figures of mine are even approximately correct, the indicated shortage of coal is 120,000,000 tons this year. If we discount a tremendous gain in production, the shortage must remain in the neighborhood of 100,000,000 tons of coal. That is going to fall heavily on someone. If the shortage is not relieved, not only will normal business suffer but even the war industries will fall behind. Only something unprecedentedly revolutionary in the way of saving coal can lessen the blow. The householder must bear his share of the burden.

According to my figures, the householders burned last year—an unusually trying one—about 135,000,000 tons of coal. Normally they burn about 120,000,000 tons. If, by the methods and devices here suggested, they can use one-third less, they will save 40,000,000 tons and make up, therefore, 40 per cent. of the shortage. They can at least save enough coal to restrict the shortage to the ordinary business and relieve the war industries completely.

It is hopeless idealism to say that 100 per cent. of the people will go to any such extreme lengths as I have advocated here and hence save one-third. Still, the more of us who do follow these simple rules, the more completely we shall relieve the danger of a coal shortage which hangs over the war industries. I am, therefore, pleading for household coal economy that we may help to remove the war industries from the danger zone.

SWEDISH SHIPS AND SWEDISH ORE

IN March there was ratified between Sweden and England a modus-vivendi agreement, whereby Sweden, in exchange for the use of 100,000 tons of shipping, was to receive a few absolute necessities, mostly maize, chemicals, and kerosene oil. Most of these commodities—some 40,000 tons originally destined for Russia—lay already in Scandinavia. In June, however, a second commercial treaty was signed in London between Sweden and the Entente powers, permitting Sweden to purchase and bring home within one year on her own bottoms—if she can—about 1,000,000 tons of divers goods, chiefly American. However, she is to yield up to the Allies the use of 300,000 more tons of shipping, 200,000 to be used in the war zone. For her own trade, around 600,000 tons remain; but the Swedes question whether these ships will be adequate, or sufficient coal forthcoming for their bunkers; also whether the supplies will actually be purchasable. They find comfort in the fact that some of the goods negotiated for are en route to Sweden, and in the lifting of the American embargo on many kinds of goods.

Although the present government and its supporting press are well pleased over the agreement, which assures Sweden raw materials, and employment, food and clothing for her people, louder murmurs arise in conservative quarters than at the once proposed agreement with Germany, when Sweden was promised 100,000 tons of cereals in return for substantial benefits. In fact, Swedish thanks are due to our State Department for timing the Luxburg revelations to the Swedish elections, and causing the fall of the palpably pro-German Lindman ministry, now superseded by Edén's coalition cabinet of Liberals and Social-Democrats. The conservative journals, ever willing to attack this cabinet, soon found fault with the agreement, on no other grounds than assumed uncertainty as to the integrity of Entente promises, literal interpretation of the public announcement of the agreement (which, being undetailed, was couched in general terms), and pessimistic considerations of the rela-

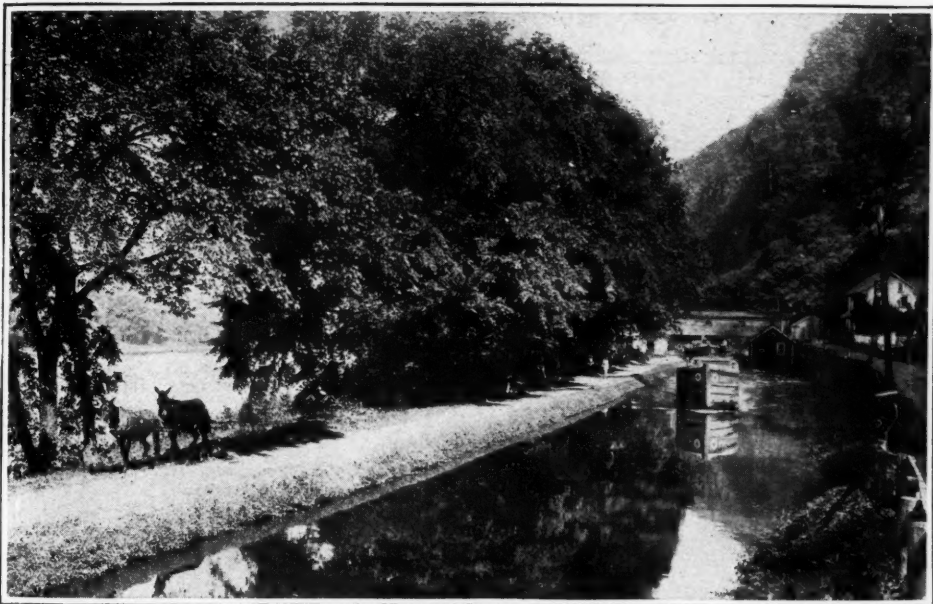
tively high price at which it was made, naturally to be expected in a world crisis like the present. All the while they knew that a full account of the negotiations had been read to the Riksdag in secret session.

It is of course natural that the Swedes should anticipate with reluctance possible increased ravages on their merchant fleet; that is, on the part of it taken over by the Allies. Says the *Stockholms-Tidningen*:

Of the 400,000 tons put at the disposal of the Allies, half is designed for the danger zone and thereby exposed to the depredations of the U-boat war. It must be admitted that a heavy decimation of our merchant fleet threatens us; and we unavoidably conclude that we shall have to pay a high price for the privileges gained.

But the editor forgets to mention that the same insurance ordinances apply to those ships as to the vessels of the Entente.

As a matter of fact, Germany, undesirous at this juncture of adding to her enemies, agrees—perhaps only tentatively—to let Sweden's trans-oceanic commerce go on undisturbed, provided she receives yearly from Sweden 3,500,000 tons of iron ore. The annual Swedish production of that ore is around 4,500,000 tons. According to the new commercial contract she is pledged to hold in reserve for Britain the difference between the amount mined and that exported to Germany, or some 1,000,000 tons per year. But England, when she does receive this ore after peace is declared, can have little use for it. It has a large phosphorus content, entailing great expense to her smelters in separating the metal. But to Germany the ore is very valuable, as by mixture with her Lorraine ore a pig iron of fine quality is obtained. It is said in Sweden that Germany has laid by a supply of iron for as much as four years ahead—reserved partly for industrial, if not for maritime, uses after the war. This rumor raises the question whether this ore is not indispensable to Germany, who is willing to agree to leave Sweden's supply ships unmolested if guaranteed a fixed amount, the bulk of Sweden's yearly production, from across the Baltic.



COAL BARGE ON THE LEHIGH CANAL, ONE OF THE GREAT COAL-CARRYING ROUTES OF FORMER DAYS

GIVE US BACK OUR CANALS!

BY JOHN WALKER HARRINGTON

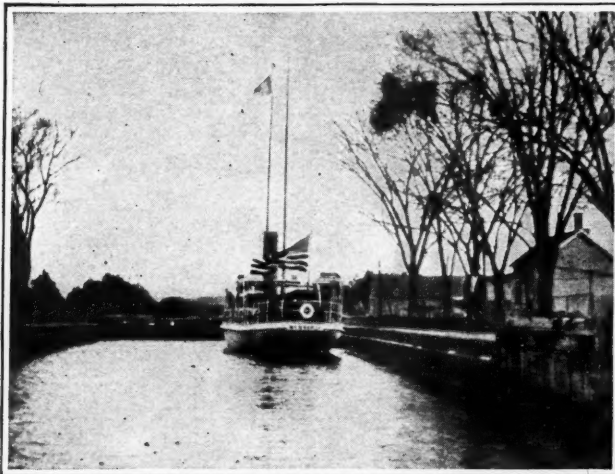
THE Government is restoring canals because they are necessities. Would that it could do so for sentiment alone, for there is a glamour about old canaling days which will never fade! They gave us towpath boys who became Presidents, promoted peace and plenty, and cut the way for civilization through the virgin wilderness.

A touch of old romance tingles within us whenever we see that familiar print showing ladies in poke bonnets and furbelowed gowns, and gentlemen in plum-colored garb, sitting on one of those barges, white-hulled and green-shuttered, which once plied the sluice which cleaves the Empire State. Some of us, as boys, sat fishing on the big wharves, now fallen to decay, and watched the creaking pullies haul into hip-roofed warehouses the cargoes of such craft as the *Queen City of the Valley* and the *Pride of the Hocking*. The canal was a great American institution, and it will be so again, because communication has reached the stage which demands its return.

Mars is commandeering the canals of this old earth wherever he can. In England, he seized water-courses which had been dug in Cæsar's day. He invaded ancestral estates and took from the half-obliterated beds of

privately owned canals the willows and alders which had grown lush for a century or more. Every facility was needed to second the rail traffic in carrying the output of the arsenals to the sea. The Inland Waterways Commission of Canada took a leaf from the book of the Mother Country. France improved her artificial streams and made them auxiliaries to the highways of steel built by our fighting engineers. The ditches beyond the Rhine aided the swarming of the Hun. While her troop trains were swinging from front to front, Germany moved munitions, heavy artillery, and bulky freight over canals and canalized rivers on which in times of peace 30 per cent. of her commerce is borne.

We all know how inadequate our own railroads proved to the tasks imposed by war. Freight cars were congested for hundreds of miles; embargoes were declared by the score, and the glut of traffic was paralyzing. In this emergency, the Director-General of the Railroads looked up the canal system, for he needed all the help he could get. The United States dug 4500 miles of canals before such panics as that of 1837, the advent of the Iron Horse, general neglect, and other causes interrupted the development of the man-made waterways. The railroad compa-



SCENE ON THE ALBEMARLE & CHESAPEAKE CANAL IN VIRGINIA
(Taken over by the Government)

nies are often berated for choking the canals, but after all the policy which they pursued was due as much to lack of vision as to selfishness.

Every country which is affected by economics goes through three phases—canal building, the neglect of the canal for the railroad, and finally the third phase in transportation, the calling in of the canal to be the ally of the tie-bound way. When we first built elevated railroads in our cities we were certain the street-car would be no more, and when the subways were dug we were equally sure that we would never again require tracks on stilts, and now we have subways, elevated railroads, and trolleys, all working with might and main to keep pace with the needs of traffic. So it is soon to be with the venerable canal—and railroad men are admitting it.

Mr. McAdoo found that the system of canals which had started out so promisingly was little more than a ghost, for 2444 miles of the channels had been abandoned, despite the fact that they had cost \$81,000,000 in building. The balance of the system, which is nominally in commission, is distributed as follows:

	No.	Mileage
Government-owned canals	17	194
State-owned canals	12	1358
Privately owned canals	16	635
Total	45	2189

The prisms of most of the old waterways were small, and their locks and other equipment generally in disrepair, and there was a

woful lack of boats even for the best of them, but the Director-General lost no time in doing what he could with them. First of all, he saw to it that vessels of some kind were set afloat in the almost deserted channels.

GEORGE WASHINGTON AS CANAL BUILDER

There is something of poetic justice in the fact that one of the first of the old sluices to be rehabilitated was the Chesapeake & Ohio, the building of which was pushed by General George Washington, who was the first president of

the construction company which called it into being. The Father of His Country was so convinced that the future prosperity of the nation had much to do with water transportation by canal, that he obtained a leave of absence while he was still commander of the Revolutionary Army, that he might start the survey for the waterway with which he hoped to connect the waters of the Chesapeake Bay with the unsalted Ohio. The project was never realized, even in part, until long after his death, but to this day the canal is a carrier of trade between Cumberland, Maryland, and Georgetown, in the District of Columbia. It derives its water partly from the Potomac, and if deepened would be of much importance to the national capital. It has for years been under railroad control. The Government has now placed additional boats upon it and the lock crews are working night and day. The channel is becoming as busy as it was in Civil War days, when eight hundred boats, ten times the number which it had when the Federal authorities took charge, were in constant operation.

Another of the old-time ditches, the Albemarle & Chesapeake, has been bought by the Government and is now being enlarged.

The President allotted \$150,000 of the War Emergency Fund under his personal control with which to restore to its original depth of six feet the Illinois & Michigan Canal, which constitutes the only water connection between the Chicago Drainage Canal and the navigable channel of the Illinois River—an historic water route.



SCHOONER IN ONE OF THE LOCKS OF THE CHESAPEAKE & DELAWARE CANAL, DELAWARE CITY, DEL.

THE NEW YORK BARGE CANAL—SUCCESSOR TO THE "ERIE"

The Administration, in effect, took charge of the New York Barge Canal, which, although it was ready for traffic in June, had no boats worthy of the name. The Federal authorities gathered together 150 barges and boats, mostly nondescripts, and concluded a contract for fifty modern craft of steel and concrete for August delivery. The impetus imparted to traffic by this act is doing much for commerce. General W. W. Wotherpoon, the Commissioner of Public Works, was able to put through a fast-freight project, and things are being done now which indicate that this giant sluice, which cost the State of New York fully \$154,000,000, will soon fulfill its mission and justify the prophecy of DeWitt Clinton.

What a tremendous factor in the life of a nation such a channel can become! It is a necessity in war—and vital in peace.

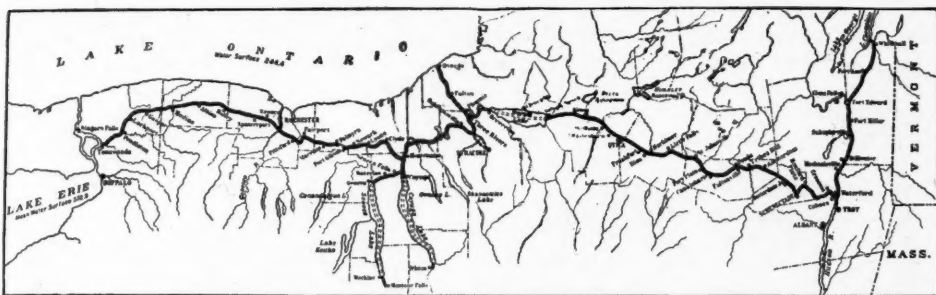
For every man who fights for us and the Allies we must land abroad 100 pounds of freight a day. One million men, therefore, need 50,000 tons of supplies every twenty-four hours. The New York Barge Canal alone, which, with its tributaries, is only carrying a tithe of what it can, is capable of transporting 10,000,000 tons of freight a year. Eighteen tons of freight must be drawn about the country each year for every inhabitant. The pressure on the railroads for the ordinary demands of commerce was

heavy enough before the urgent calls of war. Not only the heavy materials, such as building-stone and brick, can be taken-over canal routes, but large quantities of grain, potatoes, flour, and such foodstuffs can also be conveyed as quickly as by rail, on the average, and often more quickly, in the present state of congestion.

When the Erie was young, express barges, pulled by relays of horses, went from the Hudson River to Buffalo in three days and a half. Self-propelled barges, carrying 1000 tons' weight, can make 170 miles a day as compared with the forty miles a day of the ordinary freight. Even with the channel not deepened throughout, the barges of the old type have been traversing the Barge Canal in seven days. Four days ought to be a good average under the new régime, which becomes therefore a competitor with regular rail traffic which sends its slow freight in seven or eight days from Buffalo to New York, and often eleven or more, if there is unexpected congestion.

COAL CARRIERS

The Government is giving much attention to the investigation of the problem of rehabilitating the canals which formerly were employed in tapping the anthracite regions. If these old connections had been maintained, they would be very useful for bringing millions of tons of coal to tidewater every year before the close of navigation. When fac-



THE NEW YORK BARGE CANAL, LARGELY FOLLOWING THE ROUTE OF THE OLD "ERIE"

stories which make munitions are clamoring for fuel, especially in coalless New England, where cannon and rifles are made, canals of this type are a war necessity. If they had been maintained, probably fewer of us would have been shivering over pulseless radiators last winter, and some of us would be facing the coming cold weather with greater peace of mind. The old Erie, depending upon supplies brought from feeders, used to carry nearly a million tons of coal a year. The army engineers who at the request of Mr. McAdoo are investigating the feasibility of opening these abandoned coal canals, are inclined to wait until days of peace before beginning work, but such organizations as the Chamber of Commerce in New York, the Merchants' Association, and various boards of trade think that now would be an accepted time to inaugurate this movement.

The Anthracite Canals Committee, of which Mr. Harry Chapin Plummer is the chairman, would like to get action before the snow flies regarding the old Delaware & Hudson, which extends from Honesdale, Pa., to Rondout, N. Y. Although the canal is classified as abandoned, two-thirds of its length could easily be made available. It formerly bore half a million tons of coal a year to the banks of the Hudson. The Committee is also endeavoring to get action regarding the Delaware & Raritan, the old Morris Canal, which climbs over New Jersey, the Schuylkill, and many others. Although they are shallow, they could be made to serve for light-draft coal barges, and would be brought to the aid of the chilled civil population. Much valuable freight is being handled on the reaches of the old canals of this class which are still navigable.

OLD OHIO WATERWAYS

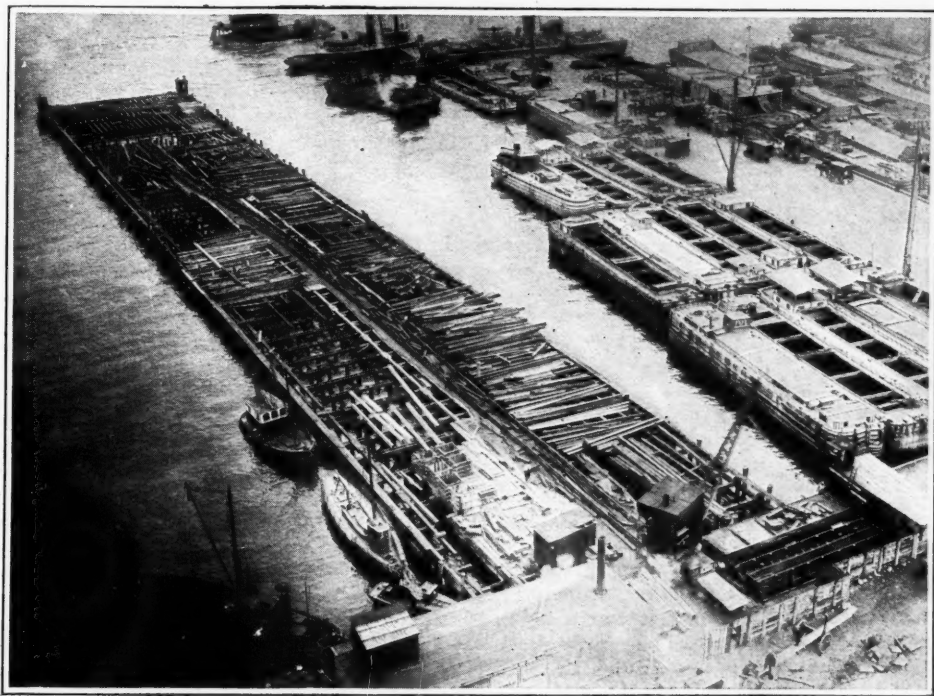
All through the Middle West there is a demand for the giving back of the canals.

Ohio, Michigan, Illinois, and in fact all those States created from the old Northwest Territory which General Washington hoped to benefit by the system he had conceived, are bitterly regretting the arrested development of their artificial waterways. Although the canals in these regions had been much neglected, and some of them damaged by floods, there is no reason why they should not be dredged and extended. The impounding of waters in the Buckeye State, for instance, has made it necessary to build large reservoirs which could be made to serve the purpose of a revived canal system. All those channels could be used in the transportation of food, coal, and bulky merchandise.

Originally conceived by the Father of His Country and often called "The Washington Highway," the proposed Lake Erie and Ohio River Canal would be an important line of communication should the Federal authorities decide to construct it, as provided by a bill introduced a few months since in the United States House of Representatives.

The channel would extend from the Ohio River, at the mouth of the Beaver, about twenty-eight miles from Pittsburgh, thence by way of the Beaver and Mahoning Rivers, the valley of the Mosquito Creek and the Valley of the Grand River to the mouth of Indian Creek, which discharges into Lake Erie six miles from Ashtabula. Its length would be 101 miles.

This canal, on account of the important territory which it would tap, would be of great value to the State of Ohio, which formerly had a canal system that was an asset to the commonwealth. It would open the way for the rehabilitation of the important sluice which once ran down the middle of the land of Buckeyes. It would give a new lease of life to even the slumbering Hocking and make Logan and Athens again ports of the inland straits. The people of Pennsylvania



THE BARGE CANAL TERMINAL AT PIER 6, LOWER NEW YORK CITY

would also welcome such a plan, for they well know the worth of canals in days like these. The canalized Monongahela River alone transported millions of tons of coal which kept the great munition plants of Pittsburgh, as well as the industries of peace, on full time and more, when the glut of traffic by rail would have stopped the supply of fuel.

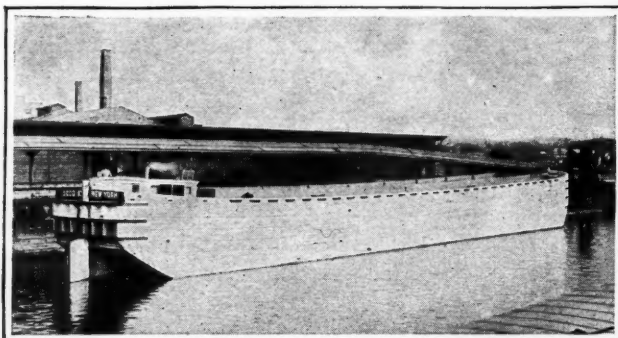
The commerce of the Mississippi and Ohio Valleys has long been in need of better inland waterways to supplement the wonderful facilities afforded by the Father of Waters and the Great Lakes. James J. Hill, astute railroad man and master builder of the Empire of the Northwest, years before his death favored the canals and the rivers as aids—not foes—of the railroad. The Government realized the vision of such seers as he, when it voted \$8,000,000 to build barges for the revival of traffic on the Mississippi River and to bring back the glories of the steamboating era. The same policy might well be extended in the fostering of the canals.

In view of the far-reaching influence of such a project as the Washington Waterway, its construction has not only a national but an international importance, for it would give the last link in a chain of deep-dug chan-

nels reaching thirty-two of our own States and the Dominion of Canada. The time is at hand when Chicago, St. Louis, New Orleans, Cleveland, Buffalo, and New York will be welded the more into a community of commerce by such means. So convinced are the proponents of the plan, that they join with others in the slogan, "Use the Waterways and win the war." The champions of the canals, realizing as they do the tremendous costs involved, would see the improvement made even now, as a military measure. They would have coal, manufactures of all kinds, and foodstuffs from Minneapolis, Evansville, Louisville, Cincinnati, and receive ore and food and goods from Duluth, Detroit, Milwaukee, Boston, Philadelphia, and Baltimore.

THE HENNEPIN

There is an insistent demand for the use to full capacity of the Illinois & Mississippi Canal, popularly known as the Hennepin. When this channel was built to its connection with the Illinois River, it was supposed that the Illinois & Michigan would be improved to corresponding dimensions, or maintained at its original depth of six feet, a foot less than that of the Hennepin. The Illinois



THE FIRST THOUSAND-TON BARGE TO MAKE ITS APPEARANCE ON THE NEW YORK BARGE CANAL

(This barge will be utilized for carrying iron ore from the mines near Port Henry, on the Champlain branch of the canal system, to ports in New Jersey. This and three sister barges, one being equipped with a steam engine, will move in a fleet, each vessel carrying about 700 tons)

& Michigan was allowed to fill up with mud at many places so that it was available for only small craft.

"The trouble with that Hennepin Canal," to quote Colonel Riche, of the United States Engineer Corps, "is that it runs from the neck of the woods to the forks of the creek."

The attention paid to the canal with which it is connected will no doubt do much to put the Hennepin back on the transportation map.

INTRACOASTAL CANALS

A source of strength to the United States, both in war and under normal conditions, is that great intracoastal system of canals and rivers just back of the Atlantic, and extending in an almost unbroken line from Boston, Mass., to Beaufort, S. C. It also connects with other channels as far south as the Everglades. The coming of the U-boats to these waters within the last few weeks has drawn attention anew to the desirability of improving these waterways. The engineers of the War Department have already recommended the spending of \$115,000,000 for the deepening of such canals as the Raritan and the dredging of bays and rivers.

Major-General W. M. Black, chief of Engineers of the United States Army, a few days ago urged the Railroad Commission to undertake the direction of the intracoastal waterways between Trenton and Beaufort through a Federal supervisor of traffic. Should this plan not succeed by using the existing tonnage, he recommended the direct management of the transportation.

The Government has taken over the Cape Cod Canal, a protected channel dredged

by private enterprise, which affords a calm and safe passage for many vessels which hitherto were in peril of leaving their bones in that marine graveyard off the treacherous promontory. Great ditches of this type would afford shelter for large war craft, just as the Kaiser Wilhelm Canal at Kiel served to shield the German battleships from attack. In the shallower canals could be assembled destroyers, swift submarine chasers, and patrol boats. These auxiliaries could operate effectively against a

superior high-seas fleet, especially if working under the protection of coast artillery and mobile ordnance mounted on railroad platform cars.

IMPORTANCE OF THE MOTOR BOAT

Flotillas of such craft, built on the Great Lakes, could be brought by our interior waterways to the coast. As the usefulness of power-boats of light draft increases, the canal system of the United States will be made



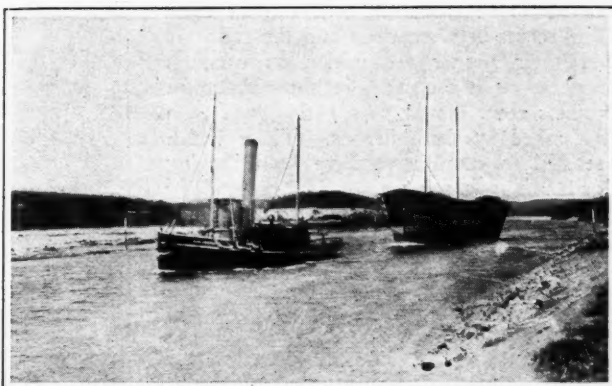
THE ROUTE OF THE PROPOSED INLAND WATERWAY ALONG THE ATLANTIC COAST

more and more available for all purposes.

In fact, these mosquito fleets of war and commerce are rapidly increasing now, as the artificial channels are developed. We see motor-boats in large numbers on the New York Barge Canal at this time. Mr. S. A. Thompson, the secretary of the Rivers and Harbors Congress, recently said that the census did not represent the actual amount of traffic on our waterways in its estimate of 376,000,000 tons a year, because it did not consider vessels of less than five tons' burden. On a single bayou in Louisiana there are more than a thousand motor-boats. As the canals are adapted for modern commerce the number of craft of all types will increase rapidly. Schooners, with masts unstepped and snugly stowed, are already appearing on the deeper sluices, on their way to that sea where they can sail, wing and wing. As the tendency of all transportation enterprises is to have large units as carriers, large barges are increasing, and the business interests of the country would therefore see the canals deepened and widened. The efforts of the Atlantic Deeper Waterways Association are beginning to bear fruit.

A CONSISTENT CANAL PROGRAM

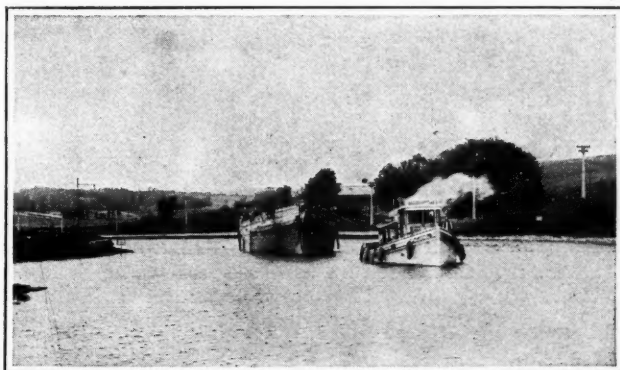
There have unquestionably been grave abuses in connection with the appropriations of the River and Harbor bills. The scent of



BARGE AND TUG BOAT PASSING THROUGH THE CAPE COD CANAL MASSACHUSETTS

the Pork Barrel is pervasive, especially when local interests are permitted to have full play. This country has spent approximately \$500,000,000 in so-called improvements of rivers and harbors and has not done all of it wisely, but, taken all in all, the canal has had faint recognition. It is time that a well-conceived program for the restoration of our much-neglected canals should begin at once. We are far behind other civilized countries in the building of such waterways as make for the primacy in trade and defense. Germany, even at the outbreak of the war, had just finished Kiel and was working on the big canal with which she planned to connect the Danube and the Rhine. Many of our canals which have a depth of six feet are in a fair state of preservation and they could be deepened in a comparatively short time. Several so-called abandoned ones have shining reaches still intact, and there still remain viaducts, locks, and other public works which could be speedily repaired. In some of our States the canals, although not used, are still sources of expense, for the highway bridges over them must be maintained and kept safe; the property guarded; and the disused ditches cleared of stagnant water and of substances injurious to health. In fact, considering the trouble and litigation which they continually cause in their present status, some of the empty canals might as well be bearing their share in transportation.

The ultimate success of

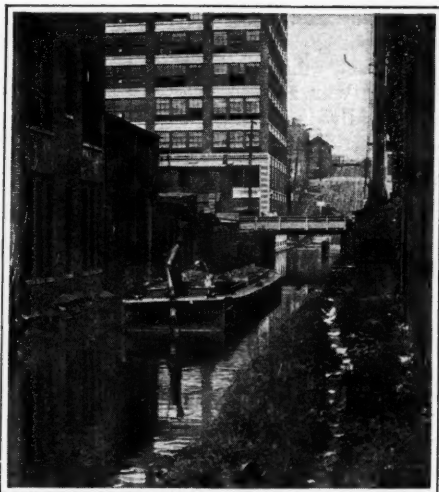


SCHOONER FROM THE GREAT LAKES BEING TOWED THROUGH THE NEW YORK BARGE CANAL TO THE ATLANTIC SEABOARD

(This boat was thus enabled to avoid a long and hazardous trip down the St. Lawrence River and along the New England coast)

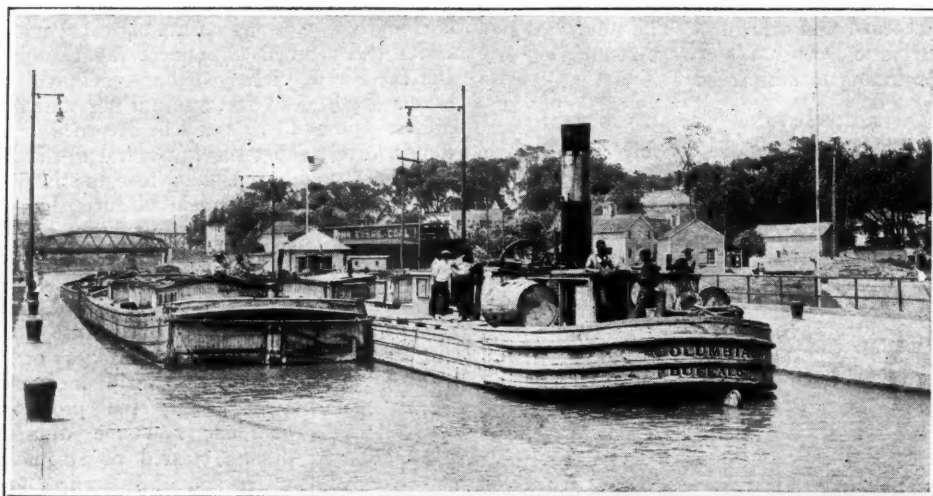
the canals in commerce will depend upon adjustments between them and the railroads and their proper recognition as common carriers. Their charge, in the opinion of business men, should be a little lower than that asked by the railroads. Those which are still in commission have been keeping down rail rates for years. The railroad, of course, has many advantages, such as the building of spurs direct to the works of manufacturers, which will always make it the leading means of transportation. Any such differentials should consider the terminal charge, which is often so disastrously assessed against the canals. The fact that the canal has never had the proper terminal facilities, at least until the completion of the New York Barge Canal, has always interfered seriously with its success as a carrier. The railroad, by refusing to make traffic arrangements, has been able in many cases to throttle canal-owners, and to absorb their property. These are all matters which are capable of adjustment.

The movement for giving us back our canals is being urged on the grounds of present military necessity and future commercial efficiency. It will undoubtedly result in the



COAL BARGE ON THE OLD MORRIS & ESSEX CANAL IN THE CITY OF NEWARK, N. J.

reviving of disused ducts and the dredging of new ones. This done, it will unite them with our inland waters and form, from ocean to ocean, a plexus of peace and plenty for the nation.



A TOW OF CANAL BOATS LEAVING A LOCK CHAMBER ON THE NEW YORK BARGE CANAL

THE DEATH OF THE MORTGAGE

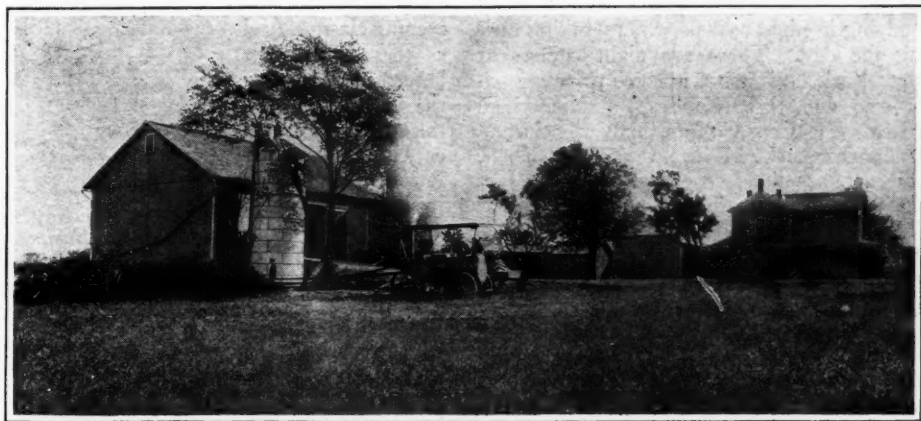
THE AMERICAN FARMER AIDED BY HIS GOVERNMENT

BY JAMES L. HILL, D.D.

UNDER circumstances which the German treaty-breakers, the disturbers of the peace, have thrust upon us, there is one thing designed to aid agriculturists to feed our armies and allies, which, with the war over, will never be abated. We raise our eyes and see an angel of benevolence coming down a common country road. It is in the form of an original system of rural credits. The Treasury Department of the United States has inaugurated a Federal Farm Loan Board, which has already loaned to the farmers of the nation more than \$117,000,000. Its outstanding feature is: If a borrower of a large amount pays his interest, he never hears again of the debt. Interest at $6\frac{1}{2}$ per cent. not only takes care of that item, but it pays off, in less than a generation, all the money borrowed. A farmer at the start requires money for buildings, machinery, and herds. The aching heart of many a widow, bereft of her home by the foreclosure of a mortgage on her property, will see the deep significance in the sacrament that I am seeking to describe. The process is called amortization. The syllable

mort, as in mortal, means death of the debt. From the first the mortgage is struck with death.

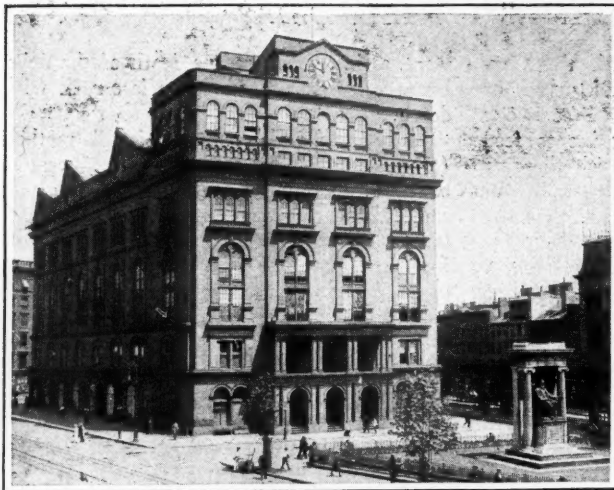
So happy for all concerned is this method (resembling in its operation a coöperative bank) of obtaining a greatly needed working capital that we may well rejoice with a large class of deserving people, who, for the first time, have the means of doing a larger, more profitable business, with the sting and hazard graciously removed. With what bitterness we have all heard the children of the poor recite the anguish that came into the home when the mortgage—like the naked sword, suspended by a single hair, over the head of Damocles—came to do its dreaded office! "But the children began to be sorely weary," says Bunyan, "and they cried out unto Him that loveth Pilgrims, to make the way more comfortable." We have come to see the Government make the way of the children, who inherit a mortgage, more comfortable. All's well! You have had no trouble with the interest. Only go on as you have been going. The farm, the home, are all yours. The mortgage is dead.



A FARM HOME IN THE MIDDLE WEST

THE COOPER UNION

SIXTY YEARS OF FREE SCIENTIFIC AND ART EDUCATION



THE COOPER UNION—AN HISTORIC NEW YORK BUILDING

IT may perhaps be of interest to country boys throughout America, as well as to boys in cities, to learn something about one of the older educational institutions of the metropolis and how it is patronized.

Thousands upon thousands of New York City boys, instead of wasting their evenings, are doing their best to get an education by studying in night schools while working during the day. There are night courses at New York University, in some private institutions, and throughout the public school system—the City College, high schools and grammar schools. Differing from them all, however, are the free educational classes at the Cooper Union for the Advancement of Science and Art.

Peter Cooper, a manufacturer of New York, wished to give others opportunity for self-development which he had been denied in his youth, a century ago. He had been an apprentice in manufacturing establishments, with an inventive turn of mind, and had later become successful in various businesses. Profiting from his own experience he formulated a plan for “giving instruction in branches of knowledge by which men and women earn their daily bread.” The

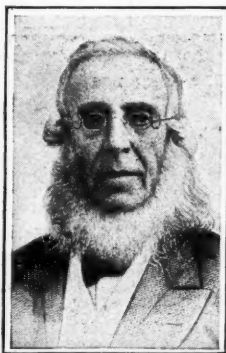
Cooper Union for the Advancement of Science and Art was therefore founded, in 1859—not the result of a provision in a will, but the creation of a man who had a quarter-century yet to live.

For more than half a century the Cooper Union has given education in order to advance Science and Art, to over 180,000 men and women, regardless of race or creed, without money and without price. It does not duplicate, it strives to give free instruction which cannot be obtained elsewhere.

The significant fact about the educational work of Cooper Union is that it is given to men who are employed during the day in industrial occupations, and who come to long continued and arduous courses at night to obtain technical, scientific, and art equipment needed to improve their condition.

Free scientific and art education in the public schools was unknown during the early days of Cooper Union, as also were evening classes. And as these advantages became available in the public schools the trustees of Cooper Union have followed a policy of raising standards of instruction.

The selection problem is serious. Present accommodations (including a large new building added only a few years ago) provide a maximum capacity of 3635 students. In the schools of science, only 483 new



PETER COOPER

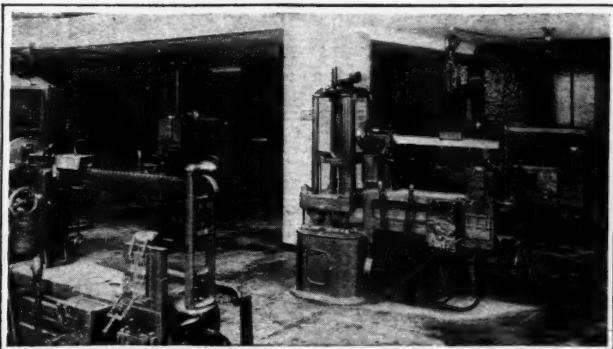
(Founder of Cooper Union, New York manufacturer and philanthropist, 1791-1883. Builder of the first American locomotive engine)

students could be admitted last year. Nine times that many applied.

For two hours a night, five nights a week, seven months a year—continued through five or six years—the young man devotes himself to his studies. Promotion depends upon examinations. In the night school of science the degree of Bachelor of Science is awarded to those who complete a six-year course in chemistry, a five-year course in civil and mechanical engineering, or a five-year course in electrical engineering. There are, besides, one-year courses in concrete construction, gas or steam engine practise, motor-vehicle design and testing, and a three-year course in mechanical drawing.

In the night school of art there are departments of free-hand drawing, decorative arts, modeling, and architectural drawing. Preference in admission is given to those engaged in occupations directly related to the instruction offered by the classes and to those showing decided fitness for such occupations. A large percentage of the students in architectural drawing come from the building trades. Lately the requirements of war industries have vastly increased the number studying mechanical drafting.

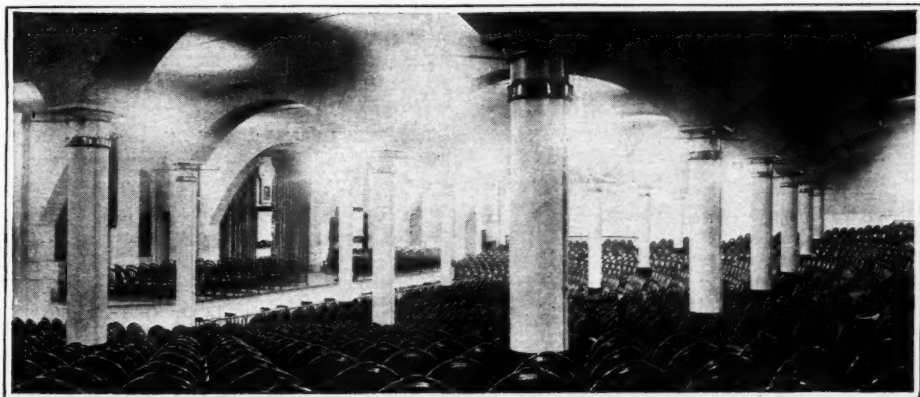
The spirit actuating the young men who spend their winter evenings through long years at Cooper Union was well set forth by the valedictorian of the last class:



TESTING MACHINES—A TYPICAL "CLASSROOM" IN THE SCHOOL OF SCIENCE

Two qualities were necessary for the work that we have now completed. First, the ambition and, second, the grit to stay to the finish against the many temptations to quit. It would be impossible to recall all the reasons and excuses for dropping out of the course that a man can think of during the five or six long years he spends here. The thinning of the ranks each year testifies to this. The majority of the men here are night students, men who after a full day's work devoted their evenings to study. The time when most people were relaxing from their day's labor, they were working here for the education they now have.

Graduates of Cooper Union may be found among the 300,000 young men who have gone into the army and navy from New York City. Many times more are in those industries which are not only "essential" but absolutely indispensable for the successful prosecution of the war. All of them, in peace or in war, represent the modern type of New York City boy with limited resources and unlimited ambition.



Photographs by New York Edison Company

THE AUDITORIUM OF COOPER UNION, WHERE ABRAHAM LINCOLN MADE THE SPEECH IN 1860 WHICH BROUGHT HIM THE PRESIDENTIAL NOMINATION

LEADING ARTICLES OF THE MONTH

AMERICAN AND BRITISH MAGAZINES AND REVIEWS

AMONG the illustrated features of the September magazines, the *Century* presents us with an authentic account of Secretary Baker's journey to England, France, and Italy, written by Ralph A. Hayes, Mr. Baker's private secretary. Among other *Century* articles on topics related to the war are "Persecuted Armenia," by Nishan Der-Hagopian; "Training to Fly and Fight," by Fortier Jones; and "Blood and Water," in which Professor Henry S. Canby describes the present attitude of the people and government of Great Britain towards the United States.

Scribner's for September has a varied and readable series of war articles: "A War Mission in the Sahara," by Raymond Recouly ("Captain X"); "The Smallest Poilus of All," by C. Le Roy Baldrige; "Women and War Finance," by Mary Synon; "France's Naval Air Service in the War," by Robert W. Neeser; "Songs in Flanders," by Major Donald Guthrie; "Fighting Under the Ground," by Captain H. D. Trounce, and "The American General Staff," by Major-General William H. Carter. This number of *Scribner's* also contains a group of six war poems, of which the last, "Rouge Bouquet," was written by Sergeant Joyce Kilmer, who fell in battle on August 1.

In the September number of *Harper's*, Mrs. Nina L. Duryea writes of "The Religion of the Trenches," relating many actual incidents and anecdotes of trench life. John Palmer Gavit begins in the same magazine a series of "Letters to a Boy," written as from a father to his seventeen-year-old son. The first installment discusses the problem of the youth's desire to enter some form of war service instead of going back to the routine of school life. "Education and Self-Government in Russia" is the title of an article in this number by Many Strunsky.

The most interesting of the non-war features in *Harper's* are Mrs. Humphry Ward's recollections of Huxley and Gladstone, and the Arctic traveler Donald MacMillan's account of his search in the frozen North for documents and relics of earlier explorers.

Former Ambassador Morgenthau's extremely valuable account of the development of the war situation in Constantinople is continued in *World's Work*.

The *North American Review* for August prints the second installment of "Letters from a French Prisoner." The war work of the Italian torpedo boats is described by Captain Vannutelli. Alleyne Ireland tells "The True Story of the Jameson Raid, as Related to Me by Mr. John Hays Hammond."

In the *Contemporary Review* (London) for July, Mr. T. H. Mawson describes the work done by the British soldier in Macedonia for the reconstruction of the country. "Transcaucasia Before and After the Revolution" is the title of an article by Professor J. Y. Simpson. Sir Hugh Bell writes on "The Position of Capital After the War," and predicts that if the productive capacity of labor can be raised by thirty per cent., England will soon be as rich as she was before the war.

In the *Nineteenth Century* (London) Lord Sydenham, discussing "The German Exploitation of Russia," urges intervention by the Allies. Dr. Arthur Shadwell maintains that peace will not be possible until the Germans have been convinced that treaty breaking does not pay.

Writing in the *Fortnightly* (London), "Politics" examines the enormous increase of Germany's agricultural wealth in recent years and the striking development of her trade and industries. His article tends to show that Germany, if defeated, will be able to pay a very large indemnity.



Photograph by Paul Thompson

LAUNCHING THE FIRST SHIP—THE QUISTCONCK—AT THE HOG ISLAND YARDS, WHERE FIFTY VESSELS ARE BUILDING
(The President and Mrs. Wilson were present on this occasion and are seen on the platform in the central foreground of the picture; Mrs. Wilson acted as sponsor)

HOW AND WHY WE ARE MAKING GOOD AS SHIPBUILDERS

IT may never have occurred to most of us that there is any marked similarity in construction between a steel bridge and a steel ship. Yet the fact that some of the processes in the building of these two typical products of modern American industry are strikingly similar has a marked bearing on the success of the great shipbuilding "drive" in which all America is now vitally interested. How much this fact means and how recently it has come to the knowledge of even the shipbuilders themselves is clearly set forth in the *Saturday Evening Post* (Philadelphia) for August 10th, by Chairman Hurley, of the Shipping Board.

One of the principal secrets is revealed in Mr. Hurley's opening paragraphs:

When the first lot of steel plates for a fabricated ship arrived at one of our big new shipyards on the Atlantic Coast last winter a Lloyd's inspector, familiar with British shipyard methods, came to a Shipping Board engineer in some excitement.

"Would you mind stepping down to look at this material?" he said. "I've never seen anything like it. Every plate arrived, with holes

punched in Indiana, and yet when they set up the work every hole fitted exactly. I must say, sir, I consider it extraordinary!"

Probably without knowing it, this worthy shipbuilding expert had encountered one of the two new factors in American shipping that are going to keep our merchant fleet on the ocean. For the first time he had laid eyes upon the product of the American bridge template maker, which is now being applied to shipbuilding with remarkable possibilities in cutting costs.

Now, as Mr. Hurley explains for the benefit of his women readers, both ships and steel bridges are made somewhat as gowns are made. That is, they are cut out of great steel plates, a quarter inch or more in thickness and sixty feet long as they come from the rolling mills. Just as a gown is cut by paper patterns, so are ships and bridges. The whole structure of this ship or bridge is laid out in the mold loft in paper patterns. A shipyard mold-loft floor is long and wide enough for building a paper ship in exact size.

This paper ship is cut up in pieces, just like a dressmaker's pattern. Each piece represents a steel plate. The template maker then fashions his template for each section of the ship. This

template is a light wooden frame made to the size and shape of the steel section, and round its edges each hole required to rivet the ship together is indicated, fitting each hole in adjoining plates. When the templates go to the punching shop they serve as patterns for cutting and punching the steel fabric from which ships are made, so it can be riveted together. Ordinarily ships have been cut singly, on the tailor-made idea. Each ship has been an individual design, and all its fabric specially cut and riveted together like a hundred-dollar suit. Patterns for one ship were seldom used for another.

The fabricated ship simply applies the ready-made idea to this industry, with parts cut out as one sees cloth cut in great clothing factories, a hundred layers at once. Thus the original templates for a fabricated ship serve to cut fifty or a hundred ships, or a thousand, should one want to order that many.

When we came to apply the fabricated-ship idea for the purpose of speeding up American merchant shipping during the war we found that the bridge-building industry had already developed template methods that could be utilized as well in shipbuilding. Our bridge builders have long held the world's supremacy in their craft. Their bridges are all over the world, and to achieve this supremacy they have standardized the industry to a remarkable extent. The material is all cut and punched in great steel shops, ready for quick erection on the bridge site. Years ago the American bridge-builder installed his template makers in light rooms, gave them accurate tools for measuring and cutting templates, and trained them in working to measurements in hundredths of an inch. The bridge-builder had to be

accurate in making a template which was to serve as a pattern for hundreds of pieces of a bridge to be put together perhaps thousands of miles from a steel mill, with no way to correct errors in fitting.

Now, the old-fashioned shipbuilder had been accustomed to making templates for one ship at a time instead of one hundred. He was willing to "cut and try," and might tolerate the variation of as much as a quarter of an inch in dimensions. So Mr. Hurley explains that when we began to cut and punch plates for the new ships a thousand miles from tidewater our new merchant shipbuilding industry took over in a day all the accumulated skill and quantity production of the American industry, and that, he says, will be one of the chief factors in reducing the cost of shipbuilding so that we can compete with cheaper labor in other countries.

On the Great Lakes we began years ago to build ships, and efficient ships, too, at a cost far below the prices for building medium-sized cargo steamers in England in normal times. The low cost of building on the Lakes is due to the fact we could build there in quantities because we had the traffic for numbers of ships. It was there that the first standard ships in the world were developed, and vessels like the White Star liner "Oceanic" have been built in Great Britain of steel plates rolled in South Chicago. Mr. Hurley predicts that by extending this standardization to ocean-going ships we can build them for forty dollars a dead-weight ton when times are again normal.

SWEDEN, GERMANY, AND THE FINNISH REVOLUTION

ONE of the best sketches of the Finnish revolution that has so far reached this country is contained in a recent number of the *Svensk Tidskrift* (*Swedish Journal*). It is avowedly scant and incomplete, owing to the impossibility of access to documentary material, especially on the Red or Bolshevik side. But it gives a telling account of this war of deliverance, which resulted in at least nominal independence for the Finns.

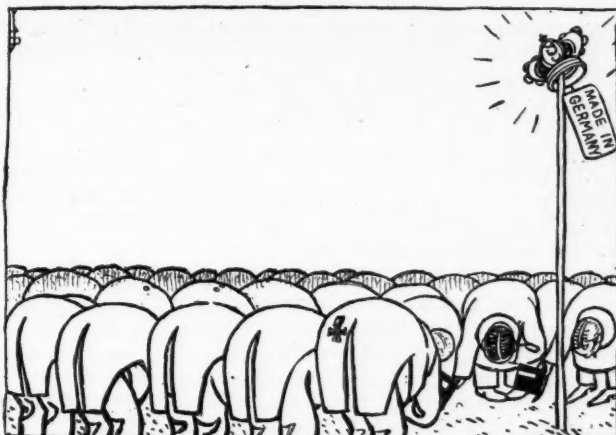
Long before the Great War there were secret relations between Germany and certain patriotic Finlanders, acting in cliques and individually. Here, as elsewhere, Hohenzollern propaganda had been active

for years. So, when the question arose of intervention in Finland, Germany was willing to furnish and maintain personnel in Finland, when Sweden would not interest herself to a like degree. Part of the way had already been paved for German interference in Finnish fortunes, doubtless planned in any case, as her present Baltic policy shows.

With the beginning of the present year political unrest was rife in Finland. Some weeks before the revolution broke out the lawful senate at Helsingfors, anticipating the outbreak of civil war, secretly appointed General Gustaf Mannerheim commander-in-chief of those few forces assembled in the

central western district of the country, which were known to be loyal. These forces—provincial militia—were the beginnings of the so-called White Guard, with headquarters at Vasa. Mannerheim, who, as a Russian general on the Eastern front for three years, was singularly fitted for this responsible command, soon had the nucleus of a patriotic army in training. This consisted mostly of peasantry, who had risen almost as one man against the principally urban element whose aim was the overthrow of the *de facto* government. These revolutionists were mostly industrial workers, but with a good measure of the most depraved classes in the proletariat. At first they merely "invited" the Russians, "Finland's oppressors of old," to come to the aid of the revolution; but later adopted the lesser role of assisting the Bolshevik troops in an attempt at what Trotsky himself declared "the re-conquest of Finland." With the commencement of the revolution in the latter days of January all the southern part of the country fell immediately and almost solidly into the hands of the Red Guard, and also part of northernmost Finland. Besides, there were garrisons of the Reds here and there throughout central Finland; and these Mannerheim forced to capitulate through a series of masterly operations. Thereupon followed speedy seizure by the Whites of most of the province of Carelia, northwest of Petrograd.

Preparations were now made for greater operations on both sides. The army of the senate carried no more than 12,000 rifles, a few machine guns, and less than twenty captured cannon, and had but a meagre supply of ammunition on hand. The officers, moreover, were mostly inexperienced militiamen; there were among them, however, a few Finnish officers just returned from Germany and some Swedish officers who had volunteered their services. But Mannerheim's Whites had now captured most of the country; only about a sixth—roughly, a triangle with a base at the west of three hundred miles, and its apex in the direction of Petrograd—remained in the hands of the Reds, who nevertheless had the advantage in military equipment of all kinds.



THE DAWN OF THE NEW FINLAND
From *Söndags-Nisse* (Stockholm)

Before the middle of February General Mannerheim applied to Sweden for the transportation across Sweden of arms of German make, which had long been waiting in Denmark for delivery to Finland. He asked in addition for permission to purchase munitions in Sweden. Denial of this caused no little disappointment and bitterness among the loyal Finns. They had counted on aid from Sweden, their old motherland, from whom they were torn by Russia in 1809. The Finns now turned to Berlin. Aid was soon forthcoming in the shape of a considerable expeditionary force, and a regiment of Finnish chasseurs, who, though called home by their senate, were not allowed to go until a consignment of 800 kegs of Danish butter, intended for Finnish consumption, was delivered over to Germany. The entire number of volunteering Swedes was less than 1000, of which about 500 formed the so-called Swedish brigade. The Senate having enacted a conscription law, on account of the insufficiency of volunteer enlistments in parts of the territory under their control, tens of thousands of raw recruits were inducted into the army. These troops, hurriedly trained and inadequately armed, nevertheless fought with terrible eagerness for liberty; and they managed to bring about the defeat of the veteran Bolshevik soldiery, and the 30,000 Finnish rebels, by the first of May. The battles occurred generally along the railroad lines, the forces of the Senate and of Germany gradually flattening the revolutionary triangle towards the Gulf of Finland on the south, until Viborg, the last stronghold of the Reds in Carelia, was surrendered.

The matter under hottest discussion in Sweden during this trans-Bothnian conflict was that of the withheld Swedish aid to Mannerheim. There were many Swedes who looked upon the war as internal to Finland only, and, in their eagerness to see Sweden's daughter country eventually included in the Scandinavian entente, blinded themselves to the fact that the Red Guard was virtually the conception and creation of Lenine. The Swedish Government realized that, as there was no break between Russia and her allies (for she was still fighting Germany) any intervention in Finland against Russian or Finnish Bolsheviks could only be construed as an act of war against the Allies. Moreover, Mannerheim had strongly opposed in the Senate any appeal whatsoever for the aid of foreign soldiery; he knew the precariousness to Sweden of intervention in Finland with an authorized armed force; and then, he knew the Germans. According to Captain Dehlgren, the Swedish journalist who recently visited this country, another reason for the Swedish refusal was fear of political disturbance at home in the event of a Finnish expedition. A strong Socialist element in Sweden upheld the aims of the Reds; though without doubt the majority of the Socialists sympathized with the agriculturist Whites rather than with the plebeian Reds. In addition to this the Tornea region by the northern Swedish frontier was at the time in the power of the Reds, and it was not known how great forces were located there. Finally, Norway and Denmark were quite opposed to intervention by Sweden; for, aside from fear that Sweden might break the Scandinavian alliance thereby, Finnish agitators had by inane procedure in those countries quite disaffected the Danes and the Norse.

Although many Finns, since the start of German political domination in their country, consider that Sweden, by refusing to aid, threw it into Germany's clutches, there have been of late several Finnish approaches to the entente of the North, asking urgently that Finland be admitted into it as the fourth member. *Dagens Nyheter*, Stockholm, makes the following comment on the matter:

Finland cannot meet her neighbors with that sense of solidarity which is the justification and the strength of the northern entente. The mutual platform is lacking. Finland is occupied in another direction, and it will not pay for her to shut her eyes and pretend her hands are free.

Göteborgs Handels-och Sjöfarts-Tidning

(*The Gothenburg Trade and Marine Journal*) comments as follows:

The Scandinavian states heartily wish the best neighborly relations with Finland, as well as with Germany. We are far from grudging Finland a new florescence after her dark years of affliction. But we cannot enter into an understanding that would jeopardize our national self-determination.

It goes on to quote this Germanophile paragraph from *Hufvudstadsbladet* (*The Capital News*), Helsingfors, Finland:

The barrier of new states that the Central Powers have made for themselves in the East, against the Russian peril, reaches up to the Gulf of Finland. But the northern termination of this rampart would be untenable, or at least much weakened, if the opposite shore of that body of water and therewith the northern coast of the Baltic were ruled by the very power against which this barricade of safety has been erected. It is consequently in the interests of the Mitteleuropa complex that Finland is free, and in such close combination with it, that it can be considered the keystone in the growing breakwater against the swelling wave of Pan-Russianism.

On these and other evidently inspired words the *Handels-och Sjöfarts-Tidning* makes the following remarks:

The *Hufvudstadsblad* thinks that Sweden ought to rejoice at the augmented security against the Russian peril, which the placing of Finland under German protection implies. We do appreciate that security. But it is unfortunately connected with the possibilities of a German peril. Through the inclusion of Finland in her chain of buffer states, Germany dominates the entire Baltic, and, as it were, bars for us the eastward way. The Finnish policy is guided by other interests than those of the Scandinavian peoples.

If the Swedes mistrust Finland it is because she is now Germany's vassal. But she begins to chafe under the German yoke. Her day of liberty is being cut short by the same sword that helped to make her free. The Finns resent her continued interference, and an acceptance of Adolph Friedrich means, not that Finland's people are crying for a king to rule them, but that Prussian coercion of the senate—including a hollow bribe of adjacent Russian territory—is taking effect, and that the Landtdag is fast in the embraces of Hozenzollern tentacles.

It seems improbable that Finland will be able to shake off the grip of the mailed fist, unless her present masters are thoroughly humbled by their Western enemies. She has become, not a free nation, but a lowly though useful Baltic province of Prussia.

A MONROE DOCTRINE FOR THE BALTIC

A RECENT article in the Swedish publication, *Svensk Tidskrift*, discusses the relation of Prussia's latest policy in the Baltic, as set forth in the treaties with Russia and Finland, to the political future of Sweden. Following the inspired utterances of the German press in this regard, the article characterizes it as nothing less than a Monroe Doctrine for the Baltic. Its fundamental principle, says the article, is,

that future Baltic questions shall be subject to the joint and exclusive decision of the nations bordering upon that sea. Outside nations are met with a blunt: "Hands off." This fundamental principle, if confirmed at the end of the present war, signifies a bouleversement of the political and international status of the Baltic; and one of great importance for Sweden as a Baltic power.

The writer recalls the continual British attempts in the past to establish the character of the Baltic as an open sea. Even as late as 1912 England made a naval demonstration for this purpose in its waters. But the efforts of Germany have continually been bent towards annihilation of western influence in that sea.

The German Baltic program now takes a definite form in the two peace treaties of March. In the first article of the Finno-German treaty, Finland binds herself not to yield any part of her possessions to a foreign power, without previous agreement with Germany. In the thirtieth article it is stipulated that the fortifications on the Aland Islands—long a Russian thorn in the side of Sweden—be dismantled as soon as possible, and that that continued unfortified condition of these islands, as well as their military and maritime status, shall be regulated by special councils between Germany, Finland, Sweden, and Russia, to which other Baltic powers may be admitted as Germany sees fit. The question of the Aland Islands is thus to be a purely Baltic one, to be settled by those powers alone that border upon the Baltic.

Thus hegemony over the islands is to be distributed, with Germany getting the lion's share, and shattering definitely Sweden's hopes of some day owning the islands—hopes weakened before the treaties by emphatic Finnish claims to them. The intense desire of the island people to come again under Swedish rule is wholly disregarded. When the Alanders, taking matters into their own hands, lately blew up the once Russian fortifications, this act of protest weighed little in the newly adjusted Baltic balance.

Beyond certain Slav countries Germany might wish to elevate to vassalage, Denmark

is the one remaining Baltic power involved. Her admission to the Baltic councils rests with Germany, who, however, it is said, has shown more consideration to Denmark than to Sweden in this matter. And Sweden can only submit good-naturedly to German paramountcy over those waters which it was once a Swedish ambition to convert into a Swedish lake.

Of the Swedish attitude towards this Baltic policy, the writer says:

It remains to consider our own position in this state of affairs, on the supposition that the ultimate issue of the war confirms it. In the opposite case, we are removed into the *status quo ante*; and that possibility must naturally be taken into consideration in the fixation of the Swedish attitude towards this new Monroe Doctrine. If the promulgated peace in the East proves final, then our position becomes at the same time simplified—a good and intimate understanding with Germany will belong more than ever to our *necessités permanentes*—and also in a certain respect aggravated, on account of the harder pressure we shall have to expect at any attempts on our part to maintain good connections with the West, so necessary for our economic life. Even now there is advanced on the German side a suspicion of our leanings in this direction as a decisive reason against future gratification of our wishes in the Aland Islands question. A victorious Germany, and a Finland controlled by the Fennoman (or anti-Swedish) party, will hardly be easily handled neighbors. The steadiness and flexibility of our foreign policy will surely be put to a hard test, and our experiences of Swedish diplomacy . . . unfortunately give us little cause for sanguine expectations.

On the other hand, it must be remembered that the balance of power which is being laboriously evolved out of this great struggle, will not be an everlasting condition; perhaps, on the contrary, of short duration. In the not too distant future we shall have to consider the reconsolidation of the Muscovite realm. Unless, moreover, the symptoms are delusive, the hissing Finnish brew will make severe trial of the new casks containing it; and the half-awake Finnish nationalism will doubtless ere long assume more fitting and honorable responsibilities than the liberation of irredentist Carelians, and the oppression of the irredentist Aland Islanders. How long Germany will be willing to offer the bones of Pomeranian grenadiers for the safety of the new Finnish state, remains to be seen. Perhaps it is uncertainty in this connection that has aroused enthusiasm in some Finnish quarters for a German dynasty in Helsingfors. However, no matter how this contingency turns out, one thing is sure. Confronted by an awakening Russia and a Finland filled with inner dissensions, possibly Germany will regard the necessity of a Sweden satisfied as to her national aspirations with less disdain than seems to be the case at present, before the spring torrent of the Finno-German brotherhood-in-arms ceases to rage.

THE FUNCTION OF "STUNTS" IN FLYING

IN an article on the airplane which he contributes to the *Yale Review*, Professor Edwin Bidwell Wilson, of the Massachusetts Institute of Technology, adverts to the former widespread criticism of professional exhibiting aviators who often took great hazards in operating their machines merely for the sake of giving a "show." From time to time one of these flyers would himself come suddenly down to death. Since the war began we have found that in fighting the ability to do just such "stunts" is essential:

The more completely a pilot can control his machine, the more easily he can toss it hither and thither—cutting figure-eights, looping the

loop, nose diving and tail diving—the better chance he has for his own life and the more certain he is to get his opponent. Sad as are the continual reports of death by accident at our aviation training camps, we may rest assured that for an undertrained pilot to go overseas to the front is almost certainly fatal, and that for every life lost in training, many are saved in fighting. Fortunately airplanes to-day are so much stronger structurally and so much better equipped and controlled than before the war, that this necessary "stunting" in school and on the field is no longer really dangerous—the real danger now lies in physical inability to "stunt." Not only must the pilot of the single-seated fighting scout be thoroughly expert on the wing, he also must be a crack shot with his machine gun. Small wonder that it takes months and months to train an aviator who may develop into an ace.

WHO WILL GET THE SALVAGE OF SUBMARINE VICTIMS?

AN article by Leopold von Stockert, King's Councillor, in the German magazine, *Über Land und Meer*, has caused some speculation in the Entente countries. The very title of the article, "Who Has the Right to Raise the Sunken Ships?" considering its source, is calculated to excite curiosity. Since when has the Teutonic mind returned to a calm consideration of "right" in matters affecting the national interest? The real motive of the writer, however, is more clearly revealed, perhaps, in the following paragraphs:

Tonnage will be needed more than ever after the close of the war, which has now come considerably nearer, and only those countries will be able to get trade quickly and enter world commerce that have sufficient transportation. For that reason it is necessary to find substitutes immediately for the tonnage that has been lost.

Auxiliary cruisers, converted back to merchant ships, and the small number of merchant and passenger ships belonging to the Central Powers which reached home ports when war broke out must be the nucleus of German-Austrian shipping. Perhaps they could also make use of some of the many hostile ships or neutral ships that were in the service of our enemies and which were sunk by the Central Powers. Although many of these ships were sunk in the Atlantic Ocean and in the Mediterranean Sea in depths that can hardly be reached, yet a number lie in the Black Sea and the Adriatic, and not a few in the Irish Sea, and in the English Channel, where they can easily be reached by German and English salvage ships, while in the North Sea and in Norwegian waters some lie less than a hundred yards deep and others are only forty yards deep.

One would infer from Councillor Stockert's discussion that international law is still remembered in Germany as an ancient science now of academic interest only. He gravely reverts again and again to the question of who has property rights to the sunken ships and cargo. "Is it the owner of the ship, or the owner of the cargo, the insurance company which pays for the loss, the nation under whose flag the ship sails, the nation which sunk it as its prize of war, and which, according to prize courts, ought to pay damages to the actual owner, or is the ship and cargo regarded as without owner, belonging to whosoever raises it from the sea? This latter view, the writer states, is the view of many professional men. A professor of the University of Vienna has asked for an international ruling on this question. He says that the problem is not an easy one. If the ship lies in the three-mile zone it would be impossible for any nation to raise it except the owner of those waters. He then naïvely remarks: "As to the question of where the sunken ships actually lie, it is likely that the German and Austrian military authorities have the best information."

It appears that a company has already been organized in Germany with a capital of five million marks (\$1,250,000) for raising ships.

Councillor Stockert concludes with the optimistic observation that the U-boat should itself be able to salvage a part of the immense value of cargo that it has sunk.

INDIA'S HOME RULE—A PROBLEM

THERE is no denying the fact that the British statesmen are gradually realizing the necessity of bringing about some reforms in the government of India. Not long after the appointment of Mr. Montagu as the Secretary of State for India he went to that country to study its political problem on the spot. On his return to London he made public the Montagu-Chelmsford report for public criticism and suggestion.

The New York *Evening Post* thus sums up the salient points of the recommendations to Parliament:

The scheme contemplates the creation of provincial legislatures, composed of representatives directly chosen; a viceregal legislature for all India, comprising a legislative assembly and a Council of State; an Indian Privy Council appointed by the crown, and a Council of Princes. With the reservation of certain matters to the provincial executive councils, each comprising the governor and two members, "the largest measure of independence compatible with the authority of the vice-regal legislatures" is promised to the provinces.

The principle of election is also extended liberally in the choice of the vice-regal legislature. Two-thirds of the 100 members of the legislative assembly and twenty-one of the fifty members of the Council of State are to be elected. Ten years after the proposed new system has been established, a commission is to be appointed to "resurvey the whole political situation," and determine what further powers, if any, may properly be relinquished to the native governments. Similar commissions are thereafter to be appointed at least every twelve years.

The reason for these recommendations for consideration in Parliament is thus succinctly set forth in the preface of the report:

Declarations of both our own and American statesmen concerning the liberalizing of the aims of the Allies have given new force and vitality to the growing demand among the progressive section of the Indian people for self-government.

Says the London *Times*:

Altogether the report offers a bold scheme of constructive statesmanship which requires very close study, for only very close study can show how far the principles laid down are effectively

carried out in practise. Its ultimate success or failure will depend on the Indians themselves. It gives them real work to do, and it makes them accountable for how they do it. Great will be the responsibility of those whom the report calls "the politically minded classes." If, rejecting once and for all the dangerous counsels of impatient visionaries and bitter fanatics, they respond wholeheartedly to this generous appeal, the trust placed in them will be justified, and India will be carried a long stage forward along the road on which we are pledged to set her feet.

The mind of England is fast changing, as is changing also the mind of the world. The British Labor party has recently unanimously passed a resolution in favor of Home Rule for India. And Dr. Lefroy, the Lord Bishop of Calcutta, the highest British dignitary in India, is quoted by *India* (London) as having said in his Intercession Day sermon in the Calcutta Cathedral:

We stand for the right of nations to live and grow according to their God-given nature, whether they are great or small. Here again we must keep our own consciences clear. We have become the paramount power in India by a series of conquests in which we used Indian soldiers and Indian allies. We have remained the paramount power in India because the Indian people needed our protection against foreign foes and against internal disorder.

We must now look at our paramount position in the light of our own war ideals. The British rule in India must aim at giving India opportunities of self-development according to the natural bent of its peoples. With this in view, the first object of its

rulers must be to train Indians in self-government. If we turn away from any such application of our principles to this country, it is but hypocrisy to come before God with the plea that our cause is the cause of liberty.

The task of the British administration in India has been much simplified by the reconciliation between the Hindus and the Mohammedans. It happened about three years ago when the Hindu and the Mohammedan leaders of public opinion representing the Indian National Congress and the All-India Moslem League met together like brothers and drew up a common platform for the political reforms of India. At the



MR. EDWIN S. MONTAGU, SECRETARY OF STATE FOR INDIA

last sessions of the League and the Congress in Calcutta, the Hindus and the Mohammedans were taking active part in each other's deliberations. And strange as it may seem, the Mohammedan Educational Conference even elected an Orthodox Brahmin, Sir Ashutosh Mukhopadhyaya, as its president. A few years ago the Mohammedans refused to have anything to do with politics. In fact, the Moslem League was started to counteract the political activities of the Congress. But ever since the beginning of the European war the same League is doing politics with a vengeance. Said the Hon. Mr. M. A. Jinnah, the president of the League, at its last annual conference in December, 1917, as quoted in the *Indian Review* (Madras):

Is India fit for freedom? We who are present here to-day know full well that from the Indian standpoint there can be but one answer. Our critics would probably challenge our conviction. Our only reply to them would be to go forward and put the matter to the proof. After all, what is the test of fitness? If we turn to history, we find that in the past, only such people have been fit for freedom who fought for it to attain it. We are living in different times. Peace has its victories. We are fighting and can only fight constitutional battles. This peaceful struggle is not and will not be wanting in the quality of vigor and sacrifice.

The *Mahommadi* (Calcutta), a Mohammedan paper, says thus in the course of a lengthy article on the Hindu-Mohammedan problem:

Be the result of Mr. Montagu's visit to India what it may, there is no gainsaying the fact that the hearts of the millions of our countrymen are leaping with the hope of great administrative changes for the better government of the country. It is quite natural. Even a fitting expectation of freedom is heavenly to a dependent nation.

Replying to the anti-Home Rule arguments of some of the Mohammedans—arguments to the effect that if self-government is granted to India, the Mohammedans would be simply crushed under the burden of the superior numerical, educational, and financial strength of the Hindus, the same journal continues:

When complete self-government is established in the country then everybody will have the privilege of holding office in both the executive and judicial departments. There will be rules and regulations to govern the branches of administration. And the entire country would be governed by the elected representatives of different interests. Local self-government will be enjoyed by all. . . . The country will be governed by all. . . .

If the Mohammedans are afraid, then the Hindus too have reason to be afraid of. They may naturally think it was just a handful of Mohammedan Arabs, approximately about five or seven hundred thousand, came out of Arabia and established their supremacy in distant corners of the globe. And it was their handful of Moghul and Pathan descendants that poured into India and subjugated this vast country. To-day there are 70,000,000 Mohammedans in India. Then a fear may naturally take possession of the hearts of the Hindus that if these Indian Mohammedans get a slight chance, they will certainly seek again to establish their supremacy over the Hindus. Who can gainsay this? . . . But when the Hindus, like true patriots and real heroes, never think of those dangers and are seeking the good of our beloved country, then such fears on the part of the minority Mohammedans are both improper and illegitimate. Nay, this is arrant cowardice, and we must crush, root and branch, any cowardice in us. The Mohammedans must understand that we are fully qualified to rule ourselves. The Mohammedans ruled the world for a thousand years. Now, if we, their descendants, feel afraid to get self-government even within the British Empire (like Canada, Australia, and New Zealand) and think ourselves to be disqualified for the task, then we certainly would disgrace and humiliate and throw darkness over the glorified and hallowed faces of our forefathers.

On the other hand, so well-informed a journal as the London *Spectator* declares that there is an enormous volume of opinion in India itself against any such reform such as Mr. Montagu proposes.

The protest of certain low-caste Hindu elements against the Montagu home rule scheme is voiced in the following excerpt from a pamphlet entitled "Indian Opposition to Home Rule: What the British Public Ought to Know":

The higher castes are determined to maintain intact their social predominance, founded on religious theories and supported by all the superstitions of the dark ages. On the other hand, awakened by the spread of Western ideas in this country, the lower classes have begun to chafe at the irritating distinctions of caste under which they are condemned to perpetual inferiority. In this respect, our society stands to-day where European society stood on the eve of the Renaissance and the Reformation. In such a state of society, the introduction of purely democratic forms of government is bound to concentrate all power in the hands of the more advanced castes, while the lower castes would be placed at a great disadvantage in consequence of any such measure unless every care is taken to see that the power to legislate and control the Executive is effectively shared by all sections of the population. . . . If the majorities in the proposed legislative councils are to consist of persons who will be typical of the majorities in the more literate castes, the fate of the vast masses of people who fill the lower strata of our society will be sealed for all time.

CHINA'S NEGLECTED MONUMENTS



Photograph by Yvette Borup Andrews

GATE AT THE OLD CITY OF TALI-FU IN YUNNAN

(Trees are growing from the upper parts of this historic structure; it will soon be a ruin)

WHILE the architectural treasures of Europe are suffering from the ravages of war, neglect and vandalism are producing no less lamentable results among venerable masterpieces of architecture and sculpture in China. To cosmopolitan lovers of the beautiful an article by Mr. Roy Chapman Andrews in the *American Museum Journal* (New York), on "China's Ancient Monuments," will provide shocks as painful as those gathered from the record of bombardments in Flanders, Champagne, and Italy.

A memorial was addressed to President Yuan Shi Kai of the Chinese Republic in 1914 by fifty-two American institutions of art, learning, and humanity. The immediate result was the promulgation of an act making legal recognition of China's monuments and antiquities and urging national cooperation in their preservation. Moreover, the Governments of the United States, Great Britain, and France, through their ministers at Peking, instructed their consuls throughout China to use all possible endeavors to further the suppression of vandalism on the part of their citizens.

Unfortunately political conditions in China soon nullified this excellent step, and in the subsequent chaos the despoiling of China's monuments and antiquities has progressed unchecked. "In the last ten years," says Mr. Andrews, "foreign collectors have visited many remote corners of the eighteen provinces on a systematic search for objects of art or archaeological value, and the menace to the records of China's ancient civilization has assumed alarming proportions." The

Chinese themselves have taken part in this work of spoliation. Last but not least, to the damage done by man has been added that due to the unchecked operations of nature; the decay of the ancient and neglected buildings has proceeded apace. In Peking

the Temple of Heaven, with its golden dome glowing like a great ball of fire above the purple tiles of its sloping roof, the white marble altar open to the sky, made sacred by the worship of China's most illustrious emperors, the beautiful *p'ai lou*, and the marble walks belong to China's posterity as records of her ancient glories. But such rare treasures need care to protect them from the ravages of time and weather.

When I visited the Temple of Heaven less than two years ago, I found its spacious courtyards choked with uncut grass and its beautiful walks and tile-capped walls almost obscured by growing weeds. The tiny roots were slowly but surely accomplishing their deadly work. The marble slabs were cracked, the tiles broken, and the walls crumbling; the great round temple itself was filled with dust and decay. In a very few decades this almost sacred spot will present only a heap of ruins overgrown with grass and weeds, and one more page will have been torn from the book of China's history.

The "Yellow Temple," not far from Peking, is one of the most sacred spots near the capital. Here are buried the garments of a holy Tashi lama who came as an ambassador from Tibet to Peking. It was the lama Panchan Bogdo from Tashi Lumpo, who died of smallpox in 1870. The ashes of his cremated corpse were sent to Tibet, but over his clothes the artist emperor, Ch'ien Lung, erected a *stupa* in old Hindu style, a mausoleum of marble and gold. When I visited it first, in 1912, a yellow-robed priest showed me, with sorrow in his eyes, the atrocious destruction which had been inflicted on this sacred monument in 1900. This was during the Boxer Rebellion, when Japanese soldiers wantonly knocked off the heads of statues with the butts of their rifles and damaged bas-reliefs, but fortunately only a small part of the marvelous detail was destroyed by this act of vandalism.

On my second visit, in 1916, after an absence of four years, I was appalled at the signs of decay. The ancient temple of gray wood, with faded but magnificent columns, yellow, blue, and green, was full of cracks and rifts. It was already leaning and seemed about to fall. In place of a beautiful *p'ai lou* which formerly faced the *stupa*, lay a heap of plaster, stone, and yellow tile. It is a very, very old temple but with a little care could still be made to stand for years.

The numerous fine photographs with which Mr. Chapman's article is illustrated include views of buildings whose aspect has long been familiar to us of the Occident, from their frequent representation in books of travel, encyclopædias, and schoolbooks; but the air of dilapidation that invests them is a novelty. They painfully reënforce such descriptions as the following:

The Hall of Classics is a group of temple-like buildings in a large garden where the text of Chinese classics is kept engraved on stone tablets. There is a wonderful *p'ai lou*, and in the center of a beautiful lake surrounded by a marble bal-

ustrade stands a splendid temple. It is the "Hall of Meditation," but now is deserted and covered with dust; dust is everywhere, blown in from the Gobi desert by whirlwinds from the north. The fine desert sand is powdered thickly over the stately throne and paneled screen, and has dulled the color of the red-lacquered wood and golden ornaments. In other halls stand classical texts engraved on stone, but between the sacred tablets are piles of boards and benches. An atmosphere of neglect, decay, and dilapidation rests on the Temple of Confucius. Not only is the material dust of the Gobi desert sprinkled over it, but something like mental dust as well, and one leaves it with a feeling of sadness that China's most precious treasures of wisdom and beauty are left untended to perish from the earth.

WALTER RAUSCHENBUSCH, INTERPRETER OF SOCIAL CHRISTIANITY

LAST month we noted in these pages the death of Dr. Washington Gladden, who had devoted much constructive thought to concrete problems of social Christianity. Before our magazine had reached its readers news came of the untimely death at Rochester, N. Y., of Professor Walter Rauschenbusch, who in recent years had shared with Dr. Gladden, Dr. Graham Taylor, and others the leadership of American thought upon these questions.

In the *Survey* (New York) for August 3, Dr. Graham Taylor characterizes Professor

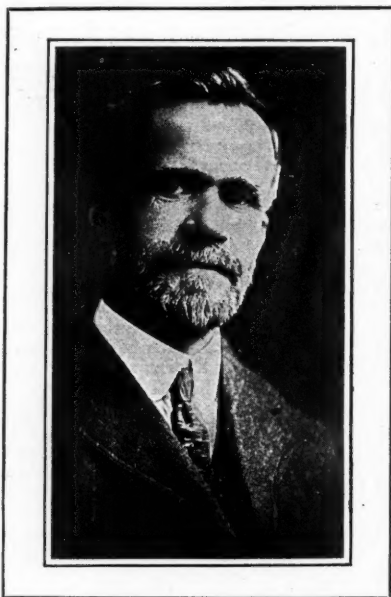
Rauschenbusch as "the foremost interpreter of contemporary social Christianity." "He, more than any of its contemporary exponents, made the social ideal, interpretation, and application of Christianity orthodox. And he did this notwithstanding his outspoken economic radicalism and his open advocacy of socialism."

Dr. Rauschenbusch, whose father had emigrated from Germany to America at the time of the Revolution of 1848, found his first field of work among the tenement-house dwellers of New York City. On returning to work too soon after an illness, he lost his hearing and falling back upon his scholastic tastes and abilities, he became a teacher in the Rochester Theological Seminary, and by lectures and writings reached a worldwide audience.

Dr. Taylor notes that while the earlier writings of Rauschenbusch have spread everywhere among free people, through Norwegian, Swedish, and Japanese translations, as well as throughout the English-speaking world, in Germany they have not yet found a publisher. He was rarely able to get "that sense of spiritual consent and harmony in discussing social and political questions with German intellectuals which I had in similar discussions with French and Swiss scholars."

In the death of Professor Rauschenbusch, says Dr. Taylor in conclusion,

"the whole church loses one of its most fearless thinkers, the Christian social movement one of its most widely recognized and deeply beloved leaders, and the international social democracy a living link connecting its economic ideals with those spiritual resources upon which their realization depends."



DR. WALTER RAUSCHENBUSCH

COSTUME DESIGNING FROM MUSEUM MATERIAL

A FASHION article in a scientific journal necessarily possesses the charm of novelty. The contribution of Mr. M. D. C. Crawford, design editor of *Women's Wear*, to the last number of the *American Museum Journal* claims attention not only because of its novel location, but because it presents a record of a most interesting and inspiring art movement, having its center at the American Museum of Natural History, in New York.

The numerous attractive costume designs with which the article is illustrated contain such titles as these:

A house coat of silk duvetyne, decorated with hand embroidery and trimmed with fur. This costume was designed from a Koryak fur coat in the collection of the American Museum of Natural History.

A dinner gown, or negligée, embroidered in wool. The method of connecting the ends of the belt was suggested by girdles from the Goajiro Indians in the museum's collections from northern Colombia.

Linen sport dress with crocheted decoration. The idea of the blouse was taken from the Philippine collections.

These specimens will serve to introduce the statement that some of the leading designers of costume in New York City are now seeking inspiration, not in Paris, but in the material gathered at the American Museum of Natural History from remote peoples, and notably from those which we class as more or less "primitive." Designers of fabrics have adopted a similar expedient.

In reference to the pictures accompanying his article the author says:

In examining the illustrations, it must be remembered that this article deals neither with a theory nor with a promise of the future, but with an accomplished commercial fact. It is intended as a practical demonstration of a very important development in the costume industry in America.

Above and beyond the artistic merit of these costumes, however, they illustrate in a definite manner a very important feature of the educational possibilities and public usefulness of the American Museum. Every single garment in the collection was founded on a specimen in the collections of this museum. In certain instances, the inspiration is perhaps difficult to trace, but in others it is quite obvious. These garments represent the first fruits of what I may term "creative research" by the American costume industry. The documents in the museum were studied with the view of applying ideas, either in decoration or in line, to modern costumes. Instead of the usual



From the *American Museum Journal*

A MODERN COSTUME SUGGESTED BY MUSEUM MATERIAL

(A class of advanced students in Teachers College, Columbia University, under Miss Ruth Wilmot, instructor of costume design, has created many modern garments along lines of form and decoration suggested by a study of specimens in the American Museum. The success of Miss Wilmot's work is attested by the fact that most of these garments have found ready sale among professional designers.)

method of importing modern foreign costumes (themselves based, generally, on foreign museum collections), our designers, familiar with the practical needs of to-day, have gone direct to original documents for their inspiration. The work, therefore, marks one of the most important movements in the development of a truly American type of industrial art.

Miss Ruth Wilmot, instructor in costume design in the Teachers' College of Columbia University, is one of the leaders in this movement. The other designers mentioned

in the article are connected with well-known firms dealing in women's costumes.

With regard to the similar development among fabric designers in this country, Mr. Crawford says:

It may not be out of place to note that this work has continued steadily, that the results have been not only artistically but also commercially

successful. Many of the most interesting designs in printed silks and cottons now on the market owe their origin to some specimen in the American Museum. Not a day passes but I see some textile design either worn in a garment or on display in a shop window that owes its origin to museum inspiration. Thus the museum has been responsible not only for commercial prosperity but also, by the character of the designs, for an improvement in national taste.

THE WORLD'S COAL SITUATION

A GENERAL survey of the coal industry during the war is presented in the *Journal of Political Economy* (University of Chicago) by William Notz.

A table given by Mr. Notz shows that coal production in most of the large coal-producing countries has decreased considerably since 1913. Great Britain, Germany, France, Austria, and Belgium show greatly reduced annual outputs. In the United States, Japan, China, Spain, and Holland the pre-war level was either maintained or increased. Canada shows a slight decrease. In all countries the chief causes for the decline in coal production were lack of labor and inability to move coal from the mines owing to car shortage. Strikes, inefficient labor, scarcity of machinery and pit timber were other contributing causes. The decrease in French, Belgian, and Russian coal production was caused by the German military invasion of large parts of the coal fields in those countries.

the war the production of coal in the United States has increased, while Great Britain's and Germany's production decreased, indicates that the lead of the United States is growing greater.

Transportation soon became, next to production, the most important problem in connection with the coal situation. At the present moment the whole question of supplying the world's needs of coal depends largely upon shipping facilities. As one means of relieving railroad traffic congestion Great Britain, the United States, and France have established zone systems. Each country was divided into areas or zones, the interchange of coal between producing areas was restricted, and consuming districts allotted specific sources of supply.

All over the world a shortage of labor has developed in the coal fields. At the beginning of the war the mistake was made in Great Britain, Germany, and Canada of drawing heavily upon the coal miners for

COAL PRODUCTION IN THE LEADING COAL-PRODUCING COUNTRIES OF THE WORLD

	1913	1914	1915	1916	1917
United States	570,048,125	513,525,477	531,619,487	585,372,568	621,409,629
Great Britain	287,698,617	265,664,393	253,206,081	256,348,351	248,473,119
Germany	278,627,497	245,482,135	235,082,000		
Austria-Hungary	59,647,957			30,896,388	28,558,719
France	40,843,618	29,786,505	19,908,000	21,477,000	28,960,000
Russia	35,500,674		27,820,632	13,622,400	13,266,760
Belgium	22,847,000		15,930,000		
Japan	21,315,962	21,293,419	20,490,747	22,901,580	
India	18,163,856		17,103,932	17,254,309	
China	15,432,200		18,000,000		
Canada	15,012,178	13,637,529	13,267,023	14,483,395	14,015,588
Spain	4,731,647	4,424,439	4,686,753	5,588,594	
Holland	2,064,608		2,333,000	2,656,000	

In a statement issued by the United States Geological Survey in 1915 the total world's production of coal in 1913 was estimated at 1,478,000,000 short tons. Of this, the United States, the largest coal-producing country of the world, alone produced about 38 per cent., Great Britain 22 per cent., and Germany 20 per cent. The fact that during

service in the army. Later the same mistake was made by the United States, but thousands of American coal miners had already left the coal fields for more lucrative employment in munition factories, where the wages ranged about 20 per cent. higher than in the coal fields. The labor shortage in the mining regions is still regarded as serious.

SHALL AMERICANS BUILD THE CHANNEL TUNNEL?

THOSE among our readers who may have assumed that the project for a tunnel between England and France was dead, or at least moribund for the period of the war, will be undeceived by reading General Francis V. Greene's presentation of the matter in the current number of the *Yale Review*.

It is well understood that the French Government has always been in favor of the project, and while the latest utterance of the British Government on the subject, made on August 16, 1917, was to the effect that "it is not practicable to proceed further in the matter during the continuance of the war," yet the press of both London and Paris during the past year has taken the opposite view and General Greene thinks there is reason to believe that the only objection on the part of the British Government at the present time is the difficulty of finding the money and the labor.

American engineers and contractors, according to General Greene, have studied the problem and are convinced of its feasibility. It has even been seriously proposed that the United States Government itself should undertake the work, with the consent, of course, of the British and French Governments.

The engineering proposition in its present stage is this: To construct under the English Channel two tunnels of approximately the same size and character as those of the Pennsylvania Railroad which extend under the Hudson River, Manhattan Island, and the East River; and to use them for transportation of passengers and freight without changing cars or breaking bulk.

The geological conditions at the Straits of Dover are declared by General Greene to be more favorable than under the Hudson and East Rivers. Most eminent geologists and engineers of Great Britain and the United States have studied them thoroughly for many years. In the narrowest part of the Channel the maximum depth is about 160 feet, and the bed or bottom is a stratum of gray chalk about 200 feet thick and impervious to water. The tunnel will be in this chalk from shore to shore protected from submarines and mines by more than 100 feet of rock and the water above it.

The rock is as soft as soapstone, and while impervious to water it can be excavated very rapidly and without blasting by cutting, sawing, or scraping machines. It will be readily understood from this that construction difficulties are much less serious than in the tunnels under the Hudson and East Rivers.

It is proposed that the two tunnels, each eighteen feet in internal diameter, shall be lined with cast iron and concrete and connected with the railways of France and Belgium at a point midway between Calais and Boulogne, and with the English railways at a point near Dover. The total length of each line is thirty-seven miles, of which thirty-two miles are in tunnel and twenty-four miles under water. The rails at the lowest point are 325 feet below water level. The maximum grade for a short distance is ninety-five feet per mile. The prevailing grade is twenty-six feet per mile.

The estimate of six years and a half for completion was based on tunneling experience prior to 1882, but American engineers think that with modern methods of cutting and handling the material, this can be reduced to perhaps less than four years. The total cost has been estimated at \$80,000,000, but that figure was reached in 1913 and there are no estimates available based on present war conditions.

After advancing various reasons why the United States as well as her Allies should be interested in the building of the Channel tunnel, General Greene proceeds to show that it would be practicable for this country even during the continuance of the war to engage in an operation of this kind. He points out that there are in America many engineers and contractors who are not employed in war activities, who are not of conscription age, and who are available for such work. The common laborers, he says, can be obtained by selection from among the German prisoners, or by importations from China, India, or Spain. The machinery can be furnished by America, and the financing must be done by our Government or under its sanction and guarantee. When finished, the ownership would be turned over to the British and French governments on terms previously agreed upon.

WOULD A LEAGUE OF NATIONS WORK?

THE idea of a League of Nations which should as far as is humanly possible secure peace for the world, is specially alluring, and commands public attention in this time of ravage and slaughter. Yet it is but fair to listen to the arguments of its opponents. In the opening article of a late issue of *Le Correspondant* (Paris), Olof Höijer gives us his reasons, based upon history and actual conditions, as he sees them, why such a league could not accomplish what its advocates claim, desirable as are their objects.

A league of that kind, he says, seems to proclaim the end of fratricidal wars, to mark the advent of a new era, where the nations will live side by side in friendly rivalry, striding forward in creative progress—that is what the apostles of the new religion proclaim in eloquent words. Experience shows us, however, that the moral beauty of a project does not suffice to assure the happiness of mankind. It is essential, therefore, to be guided by the light of history.

To-day the principle of nationalities—which is the basis of the League of Nations—commands great public favor, but that is not always a proof of truth or infallibility. Many eminent thinkers see in it, on the contrary, one of the greatest obstacles to the mutual comprehension of nations. The writer proceeds to examine what are the elements supposed to constitute a nation—geographic, racial, economic, unity of language, common memories of achievement and sufferings.

History teaches us that nations in order to create and maintain themselves have always had to pass through bloody conflicts. The principle of nationality, then, is not an automatic instrument of peace and harmony. . . . Not being universally accepted, we should have to resort to war to establish it as a basic principle of international law—which would be contrary to its aim, which is essentially pacific. . . . Thus the very constitution of the world upon the principle of nationalities presupposes war for its realization. In short, it would be unwise to make it the sole guiding principle of international policy. It must, indeed, be given due place, for to disregard national aspirations would be still more unwise. . . . But is there no way to dispel this anarchy of the nations; a way which would avoid these murderous, wasteful conflicts? According to some publicists and statesmen that way would be a League of Nations. What is this new formula of international happiness? Is it a new idea? If not, what does past experience teach? . . .

We see the first three centuries of modern times filled with bloody wars between the European states. The sentiment of nationality, far from leading to peace, was a powerful incentive to fierce wars of ambition. As a reaction from the anarchy which at times seemed the bankruptcy of European civilization, many thinkers dreamt of a Cosmopolis, an indestructible union. Charles V. essayed to carry out the idea, but in vain.

It was then that the idea of a League of Nations arose. In place of a Europe absolutely united, a vast Cosmopolis, it was hoped to found a League of Nations, which would satisfy both national aspirations and the profound desires for a European union. As far as balancing the various states while they should labor for a common peace and civilization, it was obviously a chimerical scheme, for states arise, grow, and perish like individuals. Let us remember, too, that great international treaties are rarely, if ever, definitive. They are the result of diplomatic or other battles, and the vanquished seize the first opportunity to annul its unfavorable provisions. And a treaty which when agreed upon may seem very just, may become unsuitable with time owing to changed conditions.

But why not resort to compulsory arbitration, backed up by the armed force of a League of Nations? One may justly be somewhat skeptical as to the efficacy of this solution. If, for example, "vital interests," a country's existence or its honor, are at issue, the nations regard themselves the sole judges and masters. Arbitration serves as a precious instrument for *those who desire peace*, but it is absolutely incapable of preventing *those who desire war from engaging in it*.

The writer cites various historical instances of attempts to secure permanent international peace which ended in failure. Coming down to recent times, he says: From 1848 to '78 Europe was the scene of manifold revolutions and wars. When in '78 the nations of Europe met at the great Congress of Berlin, what remained of the decisions of 1814-'15, proclaimed inviolable, infallible guarantees of a lasting peace under the august protection of all the powers? Almost nothing. Moreover, the abolition of those treaties was necessary and useful.

Thus the only value of all the means conceived to organize a League of Nations rests upon the intelligence of the men who put them into practice. If governments deem war necessary and feel able to undertake it with success, there is no institution capable of preventing them automatically. In that case there is but one effective recourse—war itself. All means to secure peace end in that paradox.

In the *Fortnightly Review* (London), Mr. J. B. Firth discusses "An Illusory League of Nations."

THE ECONOMIC ORGANIZATION OF THE ALLIES

ONE gets a realizing sense of the vast problem of supplying the war needs of the allied nations in a detailed article contributed to a recent issue of *La Revue de Paris*, by D. Serruys. He discusses not only present necessities but the economic policy that should be followed after the great struggle is over. He says in part:

Nations allied in a war which absorbs the activities of most of the adult and able-bodied, must at once combine their resources, adjust their production to the common needs, civil or military, resorting to importation when necessary, do their utmost in the way of transportation and the equitable distribution of commodities.

Economic concert of action, so essential in war, is equally essential in formulating a treaty of peace. What the Germans mean by economic peace the Allies have learned from the treaties of Brest-Litovsk and Bucharest. It is the duty of the latter to exchange guarantees to cooperate after the war, in order to heal their wounds as well as to parry new thrusts.

The Entente economic organization, projected at the outset of the war, is of French-British origin. Somewhat later, recognizing the onerousness of maritime transportation, due to their competition in neutral markets, they organized the Inter-Allied Chartering Committee. As a result of the bad harvests of 1916, the Allies conceived the idea of creating an organism which would shield them from any untoward surprises. The Wheat Executive was charged with ascertaining the resources of individual Allies, their needs, with procuring and distributing wheat and fodder where needed. Upon this model other executive committees were created for the purchase in common and the just distribution of meats, animal fats, mineral oils, and nitrates.

England was the first—in November, 1917—to adopt the principle of the extension and systematizing of inter-Allied cooperation. The United States at once on entering the conflict exhibited an eagerness to contribute effectively to the economic forces of the Allies. It was at the Paris conference, December, 1917, that was established the present economic structure of the Allies. The methods pursued since then suffice for the economic action of the Allies pending the war, while at the same time paving the way for the economic conditions which will prevail in peace.

It was essential, above all, that the mechanism should be simple and easily managed. The clear mind of the Latins, the practical spirit of the Anglo-Saxons, were admirably fitted to discern the requisite machinery and its operation.

The common use of resources presupposes two active engines only—the one to secure the purchase of products, the other, their transportation. All else is but a preparation or control of these two activities. The two essential parts of the inter-Allied machinery, then, are the Inter-Allied Council of War purchases and of finance and

the Allied Council of Maritime Transportation. The former compares and classifies in the order of their urgency the demands of each of the Allies, seeks to limit them, indicates the proper markets and methods of payment, etc.

One of the most decisive results of the inter-allied organization is the substitution of the single purchaser for the competition which prevailed before in neutral or even in Allied countries. Before the United States entered the war, the unbridled competition of the Allies had resulted in a rise in prices there which reacted upon the country itself. In the case of certain products the substitution of the single purchaser for competition has already produced a reduction by half, and the same is true of freight rates.

The most important consequence, perhaps, of the economic system of the Entente is the use in common of their tonnage. The Allied Council of Maritime Transportation has put an end to the growing danger of a periodical distribution and a constant adjustment, of Allied tonnage.

The nature of the case demands that each government should envisage every aspect of national economy.

The program of common provisioning being fixed, there follows the problem of execution. The Allied economic mechanism is simple because it admits only the essential machinery. It has been solved in such a manner that henceforth all the members of the Entente are secure, as regards their economic life and the pursuit of the war, from gaps in their provisions, from surprises which might entail disaster.

It should be recognized, the writer urges, that the mechanism adopted ought to survive the war, at least for a time. We would nullify all the results of the conflict were we suddenly to substitute for the régime of economic coöperation, which constitutes the security of the Entente, a régime of isolated action and competition. Moreover, there should be concerted action regarding industrial production, to further the economic life of the countries most ravaged by the war.

It is certain—the writer concludes—that a League of Nations would find in an economic organization analogous to that of the Entente the most effective means against preparation for any new assault on the peace of the world.

WHO ARE THE JUGOSLAVS?

THE name Jugoslavs, become so familiar of late, conveys to most Americans no definite meaning. Who are they? Where is their abiding-place? What are their aims? are questions that no doubt spring to many lips on hearing the words. An illuminating and sympathetic article on the subject appears in a late issue of *La Revue* (Paris) from the pen of H. Maritch. He shows the historic continuity—a pathetic and impressive recital—of the strivings for an independent existence of this long-suffering people. We give below some of the salient points of the article:

The name alone, Jugoslavs (jug signifying south), the writer remarks, is new, dating from the beginning of the nineteenth century. As for the people, it has existed over a thousand years, and actually occupies a portion of Central Europe and of the Balkan Peninsula—a territory of 260,000 square kilometers (about 100,000 square miles—more than the combined areas of the States of New York and Pennsylvania), with a compact population of 12,000,000 souls.

The future Yugoslavia would embrace the three branches of the Yugoslav people: Serbs, Croats, Slovenes (the Slavs inhabiting various portions of Austria-Hungary); 5,000,000 of them form the independent Kingdoms of Serbia and Montenegro; 7,500,000 are under Austro-Hungarian rule. The latter are divided into ten administrative groups, arranged in a way to secure their subjection.

Disregarding the arbitrary Austrian classification, the writer analyzes conditions in the seven Yugoslav divisions: Bosnia-Herzegovina, Croatia-Slavonia, Dalmatia, Montenegro, Serbia, the Slovene regions, and the Serbian section of Hungary.

Nowhere have the popular traditions been more vividly preserved than in Bosnia-Herzegovina. As a member of the Bosnian Diet remarked: "Alsace-Lorraine on the west and Bosnia-Herzegovina on the east form the two extreme wings of *Mittel Europa*, and Austria-Hungary has pursued in the latter a policy identical with that of Prussia in Alsace-Lorraine." Subject to Hapsburg rule, Dalmatia suffers materially more than any other Yugoslav province, because of its artificial isolation and the economic policy of the Austro-Magyars. Montenegro is the only one of the provinces that has never been under foreign rule.

Serbia's part in the present war has aroused universal admiration. She is the largest of the Yugoslav divisions, with her 4,700,000 inhabitants. The Slovenes occupy Carinthia, Carniola, and Styria, in Austria; of these, Carniola is ethnically homogeneous, with 491,000 Slovenes in a population of 525,000.

Just as the Slovenes of Austria resist German oppression, the Serbians of Hungary rebel against Magyar influence. They are as civilized and vigorous as their oppressors, and refuse to be assimilated with them.

It appears clearly from his survey, the writer says, that the 12,000,000 souls who people those seven provinces are Jugoslavs. They comprise three branches of one people, known as Serbs, Croats, Slovenes. These names have no real basis, as they all have the same origin, language, traditions, economic needs, political and national aspirations—to be united in a single free and independent state.

The first attempt at Yugoslav union, which was to result from a European war, dates back to the ninth century. Difficulties of communication and other hindrances prevented their fusion in the Middle Ages. But despite all obstacles the race feeling was so strong that at opportune moments a prince would arise who strove to realize their aspirations. It may be that their oft-renewed attempts would have succeeded had it not been for the fatal invasion of the Turks. Not only did it prevent their union, but they were forced to vegetate for centuries in a semi-barbaric condition.

It is due to their resistance against the Turks that Europe could heal its wounds and collect itself. Very few allowed themselves to be absorbed by the Moslems. They hoped against hope! That spirit preserved them to the nineteenth century. The great principles of the French Revolution—liberty, equality, fraternity—have been in their hearts from the moment of their first subjection by foreigners. But it was only in the nineteenth century, when modern means of communication allowed a closer knowledge of each other, that the sentiment of unity asserted itself.

The Jugoslavs demand no more than did the French, the Americans, the Italians, and the Germans: to consummate the intimate

union of the scattered branches of their people.

The Jugoslavs have inhabited the region north and east of the Adriatic since the sixth century. Subjugated in turn by the Turks, Teutons, Romans, they have suffered cruelly during the ages of their bondage. When portions of them succeeded in conquering their statehood, culture and civilization flourished among them.

The world war has subjected them to new, severe trials. The flower of their youth has been annihilated, some of them fighting against each other! At the same time the Dual Monarchy has persecuted them most cruelly, thousands of families have been exterminated, their goods pillaged

and destroyed. A still greater number have been imprisoned under frightful conditions, not to mention other horrors.

The writer solemnly protests against the idea that the would-be constitutions of Austria-Hungary afford the people the possibility of a free development.

Mr. Maritch says in closing:

A peace which would perpetuate present conditions would not constitute a peace for the nations of the Dual Monarchy. Such a peace would be the commencement of a life-and-death struggle of the Slavs of that country. International peace would at the same time be constantly menaced by such a situation. All the peace treaties of the world whose object has been to maintain brute force have been rapidly nullified by their own immorality.

ANIMAL LIFE IN THE WAR ZONE

SOME striking illustrations of the readiness with which the lower animals adapt themselves to changes in their environment are furnished by the observations of Mr. William Beebe, the well-known ornithologist, who writes of "Animal Life at the Front" in the *Bulletin of the New York Zoological Society*. Mr. Beebe is an ornithologist of the school of Darius Green; he is a bird-man in two senses. By virtue of one of these characters he has been enjoying bird's-eye views of the French war zone. Here are some fruits of his experience:

Under an intensive barrage or bombardment, almost every form of human activity ceases, in the area about the front lines. The sole exceptions are the aviators who, by their command of the three plans of space, are able to rise above effective fire from the Archies, or if contour flying at low heights can, by sheer speed, avoid danger from machine guns and rifles. Considering the war zone as a whole, much the same thing is true of feral animal life, birds and bluebottles, and other creatures of flight being most in evidence. In spite of the months and years of constant noise and flames, gases and dangers, wild birds have shown an astounding disregard of these supreme efforts of mankind. They soar and volplane, they seek their food, quarrel with one another, carry on their courtship, mate and rear families in close proximity to the actual fighting and exploding shells. In fact their numbers have increased near ruined villages, where they nest in the shattered houses, and in cathedrals still smoking from devastating bombardments. Besides this increased nesting facility, and the immunity from disturbance by man, thanks to his preoccupation with his fellow beings, there is a less pleasant reason for the great numbers of insect-eating birds, which live and thrive in

this region. The terrible conditions of sanitation and the numbers of unburied dead in many of the sectors result in a plague of flies, mostly great blue-bottles, and these in turn attract the birds—martins, swallows, swifts and others which find an abundance of food in these hosts of insects.

Mr. Beebe had some of his most interesting experiences with the feathered tribe while navigating their own element, far above the din of battle. He tells of meeting a skylark, apparently in full song, thousands of feet up.

Whether seen from train, motor, or aeroplane, the dominant bird-life of France, at least in winter, seemed to be the flocks of rooks and crows, feeding in the fields or drifting in their curious massed flight through the air. Rooks were the birds most frequently encountered in mid-air. In late afternoon, I once found myself among fifteen or twenty of these birds at a height of forty-five hundred feet. I had not seen them until I was close, and they too were evidently surprised, as before I could dip and pass beneath and beyond them, several had been thrown wholly out of control by the suction of the propeller blades rolling helplessly over and over, and only catching themselves when beyond the vibrations of this aerial maelstrom. There was certainly opportunity for gossip in one rookery of France that night, concerning the adventure which befell a mile above the earth.

The birds of the war zone have become fully habituated to the incessant noise and tumult, and will, says the author, probably find silence strange when peace again blesses the land.

I once lay flat in a trench looking up at a small wood, where a steady stream of machine

gun bullets was hissing past, showering down a continuous rain of twigs, splinters, and occasionally sprigs of mistletoe. Every five minutes a shell of some kind or another would rip off a branch, or bury itself in the earth; if a dud, to die with a single thud, or if fulfilling its destiny to explode and send a shower of roots, mold, and splinters in every direction. If twenty sportsmen were seated in this small patch of woodland, shooting continuously and regardless of direction, the noise and disturbance could not have been greater, yet a party of three great titmice, a small woodpecker, a jay, and a pair of wood pigeons came now and then within my field of vision, on the alert, obviously disturbed, but showing no inclination to cease feeding and escape at headlong speed, which would have been the instant reaction of any birds unused to this volcanic part of the world.

In the Tuileries Gardens in Paris, at midnight, at the height of the January raid, I saw groups of wood pigeons sleeping peacefully through the excitement—heedless of the noise of planes and star-shells, shrapnel and mitrailleuse, sirens and bugles.

One of many interesting instances of birds close

to the lines is that of the swans at Ypres. A château still nearer the Boche lines had been under intermittent fire literally for years. The building itself gradually became a mass of ruins, the woods were torn and splintered, and the great moat became little more than a half-filled ditch. Yet a pair of swans continued to live here month after month, through gas shells which made masks absolutely necessary for a half hour at a time. Every soldier hereabouts knew of the birds, and the Anzacs especially never tired of feeding them. Their ultimate fate I never learned, but the marvel of their continued existence under such terrible conditions of gas, shrapnel, and shell fragments will forever remain.

The author has less to say about mammals, but he mentions one fact that will surprise most readers: Wolves are by no means a thing of the past in France. They have been reported in several parts of that country since the war began, hunger having driven them forth from the remote fastnesses where their race still survives.

WEATHER FACTORS IN THE GREAT WAR

A QUESTION to which, so far as we are aware, nobody has yet suggested an answer is why, although from time immemorial weather has played a prominent and often a decisive part in warfare, no war before the present one has been marked by any extensive military use of the science of meteorology. Commanders have always taken more or less account of weather and climate in making their plans, but have rarely called upon experts to aid them in doing so. All this is changed now, and military meteorology has definitely arrived as a branch of applied science.

Prof. R. De C. Ward, of Harvard University, has published a long series of articles which admirably focus attention upon the *raison d'être* of this science by showing, step by step, how the fortunes of the present conflict have been governed by atmospheric vicissitudes. The latest of these, in the *Scientific Monthly*, is entitled "Weather Controls Over the Fighting During the Spring of 1918."

Even now the public hardly realizes that the great "drives" on the Western Front have not only been timed according to current and prospective weather, but have also been intermittently halted and in some cases

abandoned for no other reason than unfavorable weather.

The great German offensive this year began on the early morning of March 21. From all the evidence that has so far come to hand it is clear that the time must have been carefully chosen after consultation with the meteorological experts. It was a spell of fine, dry weather, and dry weather is one great essential, especially in the low country on the Western front, for the rapid movement of troops, of ammunition, and of supplies. With heavy rains, deep mud, and impassable roads, no quick, effective advance can be made. A dry spell in western Europe usually means that there is a well-developed area of high pressure to the eastward. This type of weather, when well established, is not unlikely to last for several days, longer, as a rule, than dry spells usually last in the early spring in the eastern United States. In western Europe, such spells bring easterly winds, which are often chilly, and also night fogs. Easterly winds are, furthermore, obviously favorable for the use of gas by the enemy, and also carry the smoke of artillery firing to the west, thus helping to screen the attacking troops.

Such conditions, easily inferred by any meteorologist who has a knowledge of European weather types, prevailed during the first ten days of the German offensive. All the meteorological factors were in favor of the enemy. The attack began in a thick fog along much of the front. The enemy advanced in many places unseen by the Allied troops, the smoke cloud also helping to serve as

a screen. Gas was successfully used in various localities. The Allied gunners could hardly see their own horses; the firing had to be more or less haphazard; the infantry was obliged to advance without adequate artillery preparation. The surprise of the British 5th Army was largely attributed to the fog. Airplane observation was difficult along much of the front. In some places the fog evidently threw the assaulting German troops into confusion, the different units being temporarily unable to join forces as had been planned. As was to be expected, the easterly winds soon became colder, and the troops were reported as needing heavy overcoats, especially at night.

This spell of fine, dry weather lasted, with but a few local and temporary interruptions in the way of showers or snow flurries, for a little over a week, but it was a week during which the enemy was able to make very considerable progress. Then heavy rains set in, continuing off and on, in spells, as is usual in the spring in Flanders. The Germans were at once greatly handicapped because of the difficulties of moving their troops.

The German papers mentioned the handicaps resulting from the rains, and explained the slackening of their offensive as being due to the weather. There is no reason to doubt that this was at least in part the case. It is clear that the condition of the roads, especially when the distance from their starting point was taken into account, made it unwise, if not impossible, for the Germans to continue their attempt at that time to break through between the British and French armies. The heavy rains may have played a more important part than many imagine.

During the renewed German offensive, early in the second week of April, the enemy again took advantage of a thick early-morning fog, during a dry spell, when the ground was hard. It was quite impossible for the Allied troops to see the enemy until the latter was very close to the front lines.

Professor Ward continues his record of conditions on the Western Front to the end of May and also details the relations of weather to military operations in the other theaters of war, during the past spring, but the foregoing quotation will suffice to show

the far-reaching importance of the subject.

At sea, the weather factor has played a considerable part. In the daring raid on the German naval bases at Zeebrugge and Ostend (April 22), Admiral Keyes, according to the reports, waited for "certain conditions of wind and weather" before he gave orders for his fleet to cross the Channel. What the British wanted was a weather type which should combine an ordinary ocean fog with winds favorable for the use of a smoke curtain for purposes of concealment. The British vessels advanced under a dense smoke screen, aided later by a fog.

According to a press report,

The losses of the Zeebrugge raiders were due almost entirely to a shift of the wind, which prevented the complete success of the smoke screen. Fortunately, the wind held in the right direction long enough to enable the *Vindictive* and her consorts to approach the mole, but changed and dissipated the screen as the men landed. This enabled the Germans to find targets. At Ostend the shift of the wind came a little earlier and upset the plans of attack.

Professor Ward quotes a statement of Philip Gibbs that "the enemy is very cunning in making use of climatic conditions, and adapts his methods to them."

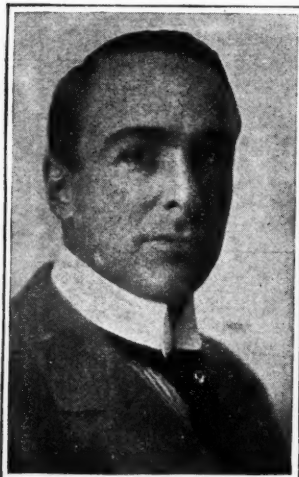
In connection with the work of the German army meteorological service, it has, since the beginning of the war, been a matter of some interest to know how the enemy obtains the observations, especially from the western coast of Ireland, which are very necessary in constructing weather maps and in making forecasts. Captured documents show that their meteorological reports are fairly complete, despite the fact that no publication of weather data or forecasts is permitted in English newspapers. An English meteorological expert declares that the answer to the question is not through any system of spies and land wireless, but that the data are obtained from observations taken by submarines. He thinks that a submarine working off the western Irish coast is detailed to send weather reports to Germany by relays through the wireless apparatus working around the British Isles.



A TUG OF WAR IN FLANDERS MUD

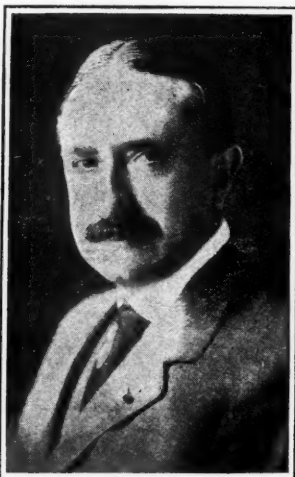
THE NEW BOOKS

THE WAR AND ALLIED TOPICS

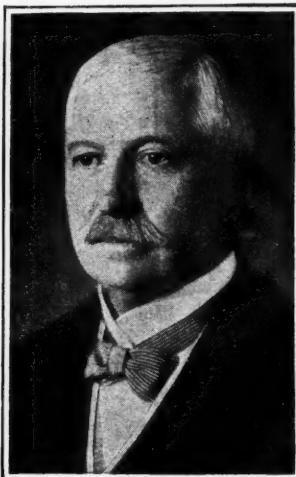


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WINSTON CHURCHILL
("A Traveler in War Time")



STEPHEN LAUZANNE
("Fighting France")



© Pach, N. Y.

GEN. FRANCIS V. GREENE
("Our First Year in the Great War")

General Foch. By Major R. M. Johnston. Houghton, Mifflin Company. 54 pp. \$1.

Almost simultaneously with General Foch's brilliant counter-attack and his elevation to the rank of Marshal of France appears this modest tribute from the pen of an American historian. Major Johnston pictures a phase of the Generalissimo's personality that has become known to only a few of his American admirers—his development as student, teacher, and theorist of the art of war. The portrayal of this side of the Allied commander's career is intensely interesting in the light of his practical achievements on the Western Front.

Fighting France. By Stephane Lauzanne. D. Appleton and Company. 230 pp. \$1.50.

The distinguished editor of *Le Matin*, of Paris, who is a member of the French Commission to the United States, gives in this little volume a vivid picture of the French at war. The facts that he presents as to the present condition of France regarding men, resources, and finances, form a complete refutation of the oft-repeated assertion that France is "bled white." The reader is impressed by Mr. Lauzanne's grasp of definite and exact information concerning the matters of which he writes. Furthermore, he speaks with authority regarding the aims of his country.

Our First Year in the Great War. By Francis Vinton Greene. G. P. Putnam's Sons. \$1.

This review of America's activities during her first year in the great war is written from the standpoint of an American General, who has

himself had experience with many of the problems that have beset our military establishment during recent months. As a military critic and historian, perhaps no living American ranks higher than General Greene. Forty years ago his account of "The Russian Army and Its Campaign in Turkey, 1877-78," was hailed by foreign military authorities as "one of the most remarkable works ever published of any campaign," and it was adopted as a text-book at the British Engineering and Artillery School. Although by no means inclined to gloss over the mistakes that have been committed since our entry into the war, General Greene believes that our condition is steadily improving and that everything at present points to a decisive victory for the Allies.

A Traveler in War-Time. By Winston Churchill. Macmillan. 172 pp. Ill. \$1.25.

This volume records Mr. Churchill's impressions of several weeks passed in England and France during the autumn of 1917. He visited the British front and received many attentions from Premier Lloyd George and other representatives of the Government. In addition to Mr. Churchill's description of the conditions in the warring countries, this volume contains a stimulating essay on "the American contribution to the democratic ideal." Mr. Churchill writes with sympathy of the American naval personnel in British waters, and particularly of Admiral Sims.

A Village in Picardy. By Ruth Gaines. E. P. Dutton & Company. 193 pp. Ill. \$1.50.

A picture of six months' relief work under-

taken by the Smith College unit in one of the small French villages just behind the front. This particular work represents only a small fraction of the effort through which the unit has already won for itself undying fame as an agency of reconstruction in war-worn France, but much of it was typical.

The White Road of Mystery. By Philip Dana Orcutt. John Lane Company. 167 pp. Ill. \$1.25.

A story of the ambulance service by a member of the American Field Service. This new book indicates some of the ways in which the ambulance driver, in the pursuit of his duties, has unusual opportunities to see what is going on along the Front.

Out of the Jaws of Hunland. By Corporal Fred McMullen and Private Jack Evans. 248 pp. Ill. \$1.50.

This is one of the few war narratives giving the experiences of prisoners in Germany. It relates the thrilling stories of two Canadian soldiers, Corporal Fred McMullen, sniper, and Private Jack Evans, bomber, who were captured three times and finally escaped from German prison camps. The book, however, is more than a merely personal narrative. It throws much light on conditions in Germany to-day.

Hunting the Hun. By Captain James Belton and Lieutenant E. G. Odell. D. Appleton and Company. 270 pp. Ill. \$1.50.

This account of the experiences of two Canadian officers contains a remarkably vivid description of the Battle of Vimy Ridge.

Genseric: King of the Vandals and First Prussian Kaiser. By Poultney Bigelow. G. P. Putnam's Sons. 207 pp. \$1.50.

Mr. Poultney Bigelow's observations always deserve attention, and indeed they never pass unnoticed. They have a fine disregard of mere tact, and they are vigorous to the point of recklessness. Whatever Mr. Bigelow feels like saying he takes the liberty to say. In his youth and for a long time afterwards, Mr. Bigelow was very much at home in Germany. He was one of the Kaiser's most intimate boyhood friends, and the intimacy was maintained during that period when Mr. Bigelow wrote his standard history of Germany, in a series of volumes. But from the very fact of his intimate acquaintance with German personalities, policies, and conditions, Mr. Bigelow knows what there is to criticize; and he lays on the lash unsparingly. This new book, called "Genseric," tells the story of that famous King of the Vandals, who went from a part of what is now Germany to Spain, then to Africa, where he ruled Carthage and subsequently conquered Rome. Mr. Bigelow calls him "the First Prussian Kaiser," and manages with immense cleverness to recount the Vandal's career in such a way as to suggest at many points the present-day methods and policies of the Hohenzollern

Kaiser. Incidentally, Mr. Bigelow's way of telling us about the Vandals of old brings to life for us a phase of European history that not many people understand, because it is only here and there that anybody nowadays can be found who has read Gibbon's "Decline and Fall of the Roman Empire." Mr. Bigelow's book would deserve to be read because of his breezy way of telling the story of this old Vandal scoundrel, Genseric. It is a book that Mark Twain would have been glad to have written.

Above the Battle. By Captain Vivian Drake. D. Appleton and Company. 322 pp. \$1.50.

This is a complete story of the training of an airman for service at the front. It describes bombing from an airplane, night flying, air photography, and the relation of the air force to the artillery.

Knights of the Air. By Bennett A. Molter. D. Appleton and Company. 244 pp. \$1.50.

Fresh facts about the air service in France from the pen of a young American aviator who joined the French service in 1916. His book has much interesting information about the personnel of both the French and American flying squadrons.

Italy's Great War and Her National Aspirations. By Mario Alberti-General Carlo Corsi—Armando Hodnig—Tomaso Sillani—Atilio Tamaro and Ettore Tolomei. Milan: Alfieri & Lacroix. Sold by Houghton, Mifflin Company. 267 pp. Ill.

In this book are summarized the relations between Italy and Austria during the past century, Italy's national aspirations, and the demonstration that she has given during the war of her military and economic strength.

The Desert Campaigns. By W. T. Massey. G. P. Putnam's Sons. 174 pp. Ill. \$1.50.

The author of this account of the work of the British expeditionary force in Egypt served as official correspondent of the London newspapers, and in that capacity observed practically the whole series of operations which had for their object to keep open the gateway between East and West. In the concluding portion of the book he describes the campaign in the Lybian desert against the Senussi.

"The Good Soldier." With Comment by N. P. Dawson. MacMillan. 177 pp. \$1.25.

A selection of soldiers' letters, written home during the years, 1914-18. Nearly all the writers were boys in years—American college students who went into the aviation service before their own country was in the war, French schoolboys, Oxford and Cambridge men, Canadians, Italians, in short, representatives of all the Allied nations. These letters reveal, as well as anything possibly could, the spirit that animates those who are fighting the battles of the Allied cause.

BIOGRAPHY, HISTORY, AND DESCRIPTION

The Real Colonel House. By Arthur D. Howden Smith. George H. Doran Company. 306 pp. \$1.50.

Next to President Wilson himself the one American in civil life concerning whom the great public is to-day most curious is Colonel E. M. House, of Texas, New York, and the world. Much of what has been written for the purpose of gratifying this widespread curiosity has been elusive and unsatisfying. The first serious attempt to present the world with an intimate biography of Colonel House has been made by Mr. Arthur D. Howden Smith. In this work we have estimates of Colonel House as a world diplomat and of his influence in American politics, a straightforward story of the relations between Wilson and House from 1911 to the present time, and an interpretation of Colonel House's own views of his function as personal adviser to the President in these most critical days. Mr. Smith's narrative of the growth of this remarkable relationship is simple and convincing. He has included in the story many facts in the career of Colonel House which are quite unfamiliar to the majority of American readers and go far to explain more recent developments.

Northcliffe, Britain's Man of Power. By W. E. Carson. Dodge Publishing Company. 456 pp. Ill. \$2.

Volumes of apology and explanation are of slight value in the case of such a career as that of Lord Northcliffe, whose own countrymen are so sharply divided in their estimation of his character. The method adopted by Mr. Carson, as Northcliffe's biographer, is far more satisfactory. He contents himself with relating what his hero has accomplished and summing up the results. Mr. Carson was associated with Lord Northcliffe for many years, and belonged to the staff of his newspaper organization. He has observed at close range the remarkable newspaper career of Alfred Harmsworth from the days of *Answers* to the purchase and transformation of the *Times*. Lord Northcliffe's part as head of the British War Mission to this country is a matter of current history.

Reconstruction in Louisiana. By Ella Lonn. G. P. Putnam's Sons. 538 pp., with maps. \$3.

The reconstruction period following our Civil War will be studied henceforth more accurately and thoroughly than has been possible up till now. The troubles of sectionalism were largely healed in the period of the Spanish war, and the present great struggle has made the country more united than at any time since the days of George Washington. There were profound mistakes of policy during the twelve years following the death of Lincoln, and these mistakes of governmental method at Washington were in no small part provocative of wrong acts of lawlessness and cruelty perpetrated by the Ku Klux and other agencies in the far South. Some of

the bitter lessons of our reconstruction experience will be applicable in parts of Europe at the end of the present great war. Miss Lonn has attempted to create a narrative of the Reconstruction period in the State of Louisiana by collating the rather extensive records and documents of the time. We should prefer to have Professor Dunning or Dr. James Ford Rhodes, or two or three of our well-known Southern students of recent American history, express an opinion as to the value of the book for general reading. Its convenience as a guide both to the incidents and to the materials of the subject, and its faithfulness as a piece of research work, will be admitted.

Our Debt to the Red Man. By Louise Seymour Houghton. Boston: The Stratford Company. 210 pp. Ill. \$1.50.

An interesting account of the contribution made by French mixed-bloods to the history of the United States. Many highly esteemed families of the Middle West are of this stock and have played an important part in the upbuilding of the nation. The Hon. Francis E. Leupp, formerly Indian Commissioner, writes a foreword to Mrs. Houghton's record of her observations among these people.

Scots and Scots' Descendants in America. D. MacDougall, Editor-in-Chief. Caledonian Publishing Company. 309 pp. Ill. \$10.

An account of the part played by Scots in the settlement and the development of the United States, Canada, and Newfoundland, to which is appended a series of biographical sketches of eminent Americans of Scottish descent. The book is illustrated with portraits, and forms the first of a projected series of volumes.

The Rise of the Spanish Empire. By Roger Bigelow Merriman. Macmillan. Vol. I. 529 pp. Vol. II. 387 pp. \$7.50 per set.

A scholarly account of the origins, growth, and imperial expansion of Spanish power throughout the world, culminating under the Catholic Kings. It is to the credit of American historical research that the best work in the field of Spanish history has been done by American historians. The present volumes are dedicated to William H. Prescott, whose "History of the Reign of Ferdinand and Isabella" appeared eighty-one years ago. Professor Merriman's work is to be completed in two additional volumes, coming down to Philip II.

Rise of the Spanish-American Republics. By William Spence Robertson. D. Appleton and Company. 380 pp. Ill. \$3.

This story of the liberation of Spanish-America is told in the form of a series of biographies of those leaders, civil, diplomatic and military, who

brought about the establishment of republics in Mexico and South America about a century ago. Seven men figure in these sketches—Francisco de Miranda, Hidalgo y Costilla, Iturbide, Mariano Moreno, San Martín, Simón de Bolívar, and Antonio José de Sucre. As an introductory chapter on what he calls "the historical background," the author describes political, religious, and economic conditions in the Spanish Indies under Charles IV. In a concluding chapter he summarizes the causes of the revolt against Spanish domination in America that took place in this transition period, 1808-1836.

Santo Domingo. By Otto Schoenrich. Macmillan. 418 pp. Ill. \$3.

The author of this work served as secretary to the special United States Commissioner to investigate the financial condition of Santo Domingo in 1905, and later as Secretary to the Dominican Minister of Finance. His book is both historical and descriptive, although by far the greater portion of it is devoted to the present condition of the island. When one considers the close relations that our own Government has had with Santo Domingo in recent years, it is remarkable that this is the first work of its scope to appear in the English language in fifty years. This, however, is not to overlook or belittle in any way the important "Report on the Debt of Santo Domingo" by Professor Hollander, published in 1905.

Denmark and Sweden. By Jon Stefansson. G. P. Putnam's Sons. 378 pp. Ill. \$1.50.

An account of the two Scandinavian countries, Denmark and Sweden, written by an Icelander, who is introduced to the American public by Viscount Bryce. A timely addition to the book is a sketch of the history of Finland from its separation from Sweden in 1809 down to the outbreak of the Great War. In view of the fact that Finland has just become an independent republic, this survey of her history has peculiar interest at this time.

The Battle of Plattsburg. By John M. Stahl. Chicago: Van Trump Co. 166 pp.

A restudy of important land and naval engagements in the War of 1812. The author is convinced that great injustice has been done to the American soldiers and sailors in this war. Man for man, they proved more than a match for Wellington's veterans and for Great Britain's seasoned sea fighters. Yet the ignorance among Americans concerning their exploits is so widespread as to be almost incredible. Mr. Stahl has done his best to dispel that ignorance, at least regarding the fighting at Plattsburg.

The Invasion of Washington. By John M. Stahl. Chicago: Van Trump Co. 259 pp.

In this volume Mr. Stahl repels the charge of cowardice, ignorantly brought against the troops to whom was committed the defense of the city of Washington in the war of 1812. He shows that the real fault was not any lack of valor on the part of American soldiers, but rather a dis-

graceful state of unpreparedness for which the politicians of that day were responsible.

Central Oregon. By W. D. Cheney. Seattle: The Ivy Press. 149 pp.

The late James J. Hill called central Oregon "the last Great West." Those who live in that part of the country look forward to a great industrial and agricultural development after the war. This little book contains a compact description of the scenic and agricultural features of the valleys and plains that are compromised in this great region. It has further distinction as one of the earliest attempts at book-making in the Pacific Northwest.

Camps and Trails in China. By Roy Chapman Andrews and Yvette Borup Andrews. D. Appleton and Company. 334 pp. Ill. \$3.

The American Museum of Natural History sent Mr. Andrews into the little-known section of northern China along the border of Thibet to make explorations and collect specimens of fauna. Mrs. Andrews, who is an expert photographer, accompanied her husband and secured many remarkable photographs. In due time the technical reports of this expedition will be published by the Museum. The present volume is a popular narrative in which details of a purely scientific nature have been condensed or eliminated in order that the authors may relate such of their experiences with the natives and animals of that remote region as may be of interest to the general reader. There are chapters on "China in Turmoil," "The Yen Ping Rebellion," "The Women of China," "Through Unmapped Country," "Stalking Thibetans with a Camera," "Monkey Hunting," "Prisoners of War in Burma," "Big Game Paradise," and various other topics of curious interest related to the authors' explorations, adventures and observations in that strange land. A chapter on "Missionaries We Have Known" is especially enlightening and valuable.

Color Studies in Paris. By Arthur Symons. Dutton. 260 pp. \$3.

The word Paris conjures the image of Paris before the war, and it is of this pre-war city that Arthur Symons writes in his "Color Studies in Paris." One finds all of the life of the boulevards, of Montmartre, of the Quartier Latin, of the gay restaurants, the theaters, the shops, the studios, in his sketches. He writes that Paris was to his mind the most recreative city in the world, the abode of irrepressible youth, of the *joie de vivre* needed for the rejuvenation of art and of life. Eight chapters are concerned with the life and work of Paul Verlaine; others with George San, Leon Bloy, Charles Cros, Victor Hugo, Petrus Borel, Watteau, and Odilon Redon. It is a most delightful and intimate volume, impressionistic and atmospheric, the more satisfying because one is hardly conscious of the telling of the recollections. Delicately, suggestively and with a certain soft melancholy, Symons crystallizes certain impressions quite beyond the power of words to convey. The volume is illustrated with autographs, facsimiles of manuscripts and reproductions of rare cartoons and portraits.

PLAYS AND PLAYWRIGHTS

"May we then secure a theater where we may be horrified over the horrible, laugh over the laughable, play with the playful; where we can see everything and not be offended, when we see what lies concealed behind theological and esthetic veils, even if the old conventional laws must be broken; may we secure a free theater, where we shall have freedom for all things save to have no talent and to be a hypocrite and a fool."

—AUGUST STRINDBERG: "The One-Act Play."

THIS ideal of the great Scandinavian playwright seems to have been approached, if not fully attained, in this country by the organization known as The Wisconsin Players. Under the able direction of Mrs. Laura Sherry, they have held the interest of the public for seven seasons. During that time they have presented a virile program of translations from foreign plays, and have persistently sought to develop original talent that would place in dramatic form the characteristics of Middle Western life.

The second series of "Wisconsin Plays"¹ contains four one-act plays, with an introduction by Zona Gale. They were performed at the Players' home theater in Milwaukee, at points in the Middle West, and at the Neighborhood Playhouse in New York, during the past season.

"The Feast of the Holy Innocents," by S. Marshall Illsley, is a delightful whimsicality that reveals the perpetual innocence abiding in the minds of two elderly maiden ladies of a small town, who have been frustrated in their long-planned trip to Paris, and plan, secretly from each other, to go to Milwaukee and see the "wicked" French actress, Bernhardt, play "Camille." The texture of this play seems more that of New England than of Wisconsin.

"On the Pier," by Laura Sherry, is a notable piece of modern realistic writing. A young girl and a boy meet on a pier and simultaneously attempt to jump in the river. The miracle of the sudden kindling of love prevents the tragedy.

Maeterlinck has been the root soil from which Howard Mumford Jones seems to have drawn inspiration for "In the Shadow." It is an allegory of love, and the most subtle and powerful of the four plays.

"We Live Again," by Thornton Gilman, relieves its melodramatic action by the sheer force of its teaching. Religion that has become empty form is contrasted with the living Word. The mother who feeds the dying outcast from the communion cup is a splendid characterization, and typical of the new spirit in religion.

In the "Flying Stag" series of plays, published by Egmont Arens and sold at the Washington Square Bookshop, in New York, are "The Chester Mysteries," a Passion Play as acted on Christmas eve by the Greenwich Village Players, and three one-act plays.

"The Sandbar Queen," by George Cronyn, is a free and daring play of life in the Northwest.

¹Wisconsin Plays. Huebsch. 217 pp. \$1.50.
 "The Sandbar Queen." By George Cronyn. Arens (New York). 46 pp. 35 cents.

The place is the north bank of the Frazer River, Camp 183, British Columbia. The Washington Square Players, of New York, gave it a notable production.

James Oppenheim's "Night"² is a poetic play of great beauty and dignity. It was produced by the Provincetown Players.

"The Angel Intrudes,"³ by Floyd Dell, is a subtle, humorous trifle of a play with undercurrents of irony. A man and his sweetheart are about to elope, when his guardian angel appears and finding earth and its ways to his liking, wins the girl and elopes with her in the man's waiting taxi. This was also performed by the Provincetown Players.

One finds in "They The Crucified,"⁴ the first play in a volume by Florence Taber Holt, a drama of Belgium broken upon the wheel of war. The play ends with the utterance by the Maker of Crosses: "Vengeance is mine; I will repay, saith the Lord." In the second play, "Comrades," the action takes place inside an old chateau near Brussels. A German lieutenant, a Bavarian, defends a young Belgian girl against a Prussian officer—in the end with his life. For dramatic intensity and swift envisaging of the human equations of Belgium's tragedy, these plays deserve high praise.

"The Book of Job as a Greek Tragedy Restored,"⁵ will prove of dominant interest to biblical students and admirers of the Euripidean drama. The text of the Book of Job has been restored and placed in its present form by Dr. Horace Meyer Kallen from the text of the American revision. It is rearranged according to what seems to have been its original form, that of a Greek tragedy after the manner of Euripides. Dr. Kallen believes that Job was the result of certain contacts between the Jews and the Greeks previous to its composition, about 400 B. C. This opinion has been held by scholars for a lengthy period of time. In 1587, Theodore Beza lectured at Geneva, Switzerland, on the Book of Job, dividing it into acts and scenes. Lowth, in his work on Hebrew poetry in 1753, concludes that Job is a dramatic poem if not a drama. Dr. Kallen's introduction presents many inspiring and original interpretations of the Hebraic conceptions of God, man, nature, and the destiny of man. The "Suffering Servant" of Job, he identifies with the Zerobabbel of Isaiah, who was to liberate Israel and bring about the Golden Age. He thinks that in Job the Hebraic mind pictured the attainment of disillusion by the mastery of self without the compensating mastery of nature. Dr. Kallen's version was played by the Wisconsin Dramatic Society, and also by the Harvard Menorah Society, in Boston. Another

²Night. By James Oppenheim. Arens. 24 pp. 35 cents.

³The Angel Intrudes. By Floyd Dell. Arens. 23 pp. 35 cents.

⁴They The Crucified. By Florence Taber Holt. Houghton, Mifflin. 84 pp. \$1.

⁵The Book of Job as a Greek Tragedy Restored. By Horace Meyer Kallen. Moffatt Yard. 163 pp. \$1.25.

production of Job, by Stuart Walker, excited great interest in New York last winter.

In "Exiles," by James Joyce, author of "Dubliners," we have his best work so far, sustained by dramatic form around the thesis that the present order fails to sustain man's immortal spirit. The play is introduced by the sentence that "it belongs on the shelf with Hauptmann and Ibsen." Critically speaking, as dramatic structure, it can hardly claim that distinction; as a new social gospel or the suggestion of a path leading thereto, it must have a shelf of its own. It is a story of the old triangle: two men who love one woman, or try to be sure that they love her. One man wars against the specter of fidelity, the other against the specter of friendship. The greater of the two refuses to find rest in any darkness of belief; he must love nakedly in the flame of eternal doubt. Spiritual balances win over moral balances, and one feels the shadow of Ibsen's words: "Morality has behind it natural claims that transcend it." The lyrical tempo of the text is at times on the point of melting into poetry. It is delicate and atmospheric with an undercurrent of Ecclesiastes beneath the questioning.

Algernon Blackwood's re-incarnation play, "Karma," a drama in three acts with a prologue and epilogue, shows the same characters in four different periods of time, once in England of today, in ancient Egypt, Greece at the time of Alexander, and in the Italy of the Medicis.

Mrs. Lattin, invalid wife of Philip Lattin, British agent in Egypt, learns through a vision in which she plays the rôles of her other lives, that a fault may recur life after life, and that until it is conquered the soul cannot be freed to health of body and mind in its earthly vehicle. She awakens from her vision to make reparation to her husband for her selfishness that has ruined his life-work through four incarnations.

Abraham Cahan, editor of the *Jewish Daily Forward* (New York), writes in the preface of "The God of Vengeance," a powerful play by Sholom Ash, that this young writer belongs to the younger group of Yiddish story-tellers and now that Abramovitch, Rabinovitch, and Peretz are in their graves (they have all died during the last two years), he is the most popular writer of Yiddish fiction. Sholom Ash was born in Warsaw about thirty-seven years ago, and is at present living in New York. This play, "The God of Vengeance," was first produced by Max Reinhardt in Berlin, in 1910. Because of its symbolism and poetic interpretation of Jewish character, it speedily found its way to the stage of every European country. Yekel Tchaftchovitchy and his wife, Sarah, center all their hopes on their daughter, Rifkele, the pure jewel, the obedient daughter of the house of Israel. Meanwhile to live and to

provide her with a dowry, they conduct a nefarious business. Rifkele is drawn down to the depths; even the Holy Scroll (The Torah) Yekel has had made for his house cannot save her from the pit dug by her parents. Cahan writes that Sholom Ash's plays are alive with poetic realism and throb with dramatic force and beauty. That his passionate color and melody produce a rich, ravishing style wherein even the "jargon of servant maids becomes music." Other works of Ash's translated into English are: "Short Stories," "The Town," a collection of sketches of Yiddish life in the old world, "Our Faith," a drama, "The Sinner," a one-act symbolic play, and "Mottke, the Vagabond," a tale of the underworld of Warsaw.

The fifth large edition of Archibald Henderson's brilliant analysis of the work of the leading foreign playwrights, "European Dramatists," adds to the masterly criticism of Ibsen, Shaw, Maeterlinck, and others, a study of Strindberg that will remain—at least for a time—the last word regarding the Scandinavian genius. Floods of critical analysis and of biographical data have been poured forth around Strindberg during the last ten years. The public owes a debt to Edwin Björkman, who gave us our first authentic perspective of his life and work, and to Velma Swanston Howard, Elizabeth Clarke Westergren, and others for pleasing translations. But to Henderson, the serious student must turn for a synthesis of Strindberg, genius and man, and for the most searching study of his dualism yet made. He considers Strindberg the arch subjectivist of our era, and one who like another Dante haunted the shades of a modern Inferno, but unlike Dante, in searching for God, he found the devil. He finds that although in his lifetime Strindberg sought to annex the entire domain of the human spirit, he touched the highest and the deepest depths of human consciousness without becoming other than what he was at the first, a "plebeian of the soul." He was an idealist however misguided, but it was his tragic fate never to realize or even comprehend that the "clue to human happiness is not strife, struggle, doubt and denial, but the humorous acceptance of personal limitations and human frailties."

In "The Problems of the Actor," Louis Calvert brings the dramatic student all the ripe wisdom of stage craftsmanship accumulated in his career of forty years on the English-speaking stage. How do great actors reach their goal? Mr. Calvert answers the question: By the same attributes of character that make success in any other profession. The delightful chapters of his book, remarkable alike for the definiteness of their instruction and literary charm, touch upon all matters connected with training for the stage. The most interesting character study, and analysis of acting is given in the chapter devoted to the art of the late Sir Herbert Tree.

¹Exiles. By James Joyce. Huebsch. 154 pp. \$1.

²Karma. By Algernon Blackwood and Violet Pearn. Dutton. 207 pp. \$1.60.

³The God of Vengeance. By Sholom Ash. Stratford Co. 99 pp. \$1.

⁴European Dramatists. By Archibald Henderson. Stewart & Kidd. 429 pp. \$2.

⁵Problems of the Actor. By Louis Calvert. Holt. 274 pp. \$1.60.

TELEPHONE STOCKHOLDERS AND THE GOVERNMENT

IN the \$5,000,000 estate of a New England man, recently deceased, there was found a 50 per cent. proportion in shares of telephone and telegraph companies. Most of these stocks were of the American Telephone & Telegraph and the Western Union. Quite probably they were bought at very much higher prices than now rule. Until this year American Telephone had not been under par since 1908. Meanwhile, it had sold as high as 153. It paid dividends of 8 per cent. and every few years issued new stock at par to its shareholders. The value of such "rights," between 1911 and 1916, was the equivalent of \$10 a share.

Rise and Fall in Stocks

In 1909 purchase of a controlling interest in Western Union was obtained by the American Telephone & Telegraph for the purpose of consolidating the two systems of communication in the interest of national economy. Western Union, then a Gould property, had to be rehabilitated. For some years it had been paying 3 per cent. dividends. Earlier in its history it had distributed 5 per cent. and its stock had sold above par. Like American Telephone, it was rather widely owned by investors. During the period of its upbuilding by the Vail interests it was careful in what it paid to shareholders but as soon as the fruits of new capital invested began to appear it cautiously raised its rate—to $3\frac{3}{4}$ in 1914, $4\frac{1}{4}$ in 1915, 5 in 1916 and then to 7 per cent. in 1917. This is the present dividend payment. The price of the stock, following the improvement in physical condition and financial strength, rose from $53\frac{1}{2}$ in 1914 to $105\frac{1}{2}$ in 1916, or an increase in price of 100 per cent. during the process of doubling the rate of dividend.

During August American Telephone & Telegraph stock sold around \$90 a share, the lowest it had been since the 1907 panic, and Western Union stock declined to a price below \$80 a share, or where it had sold previously when it paid dividends of $4\frac{1}{4}$ per cent. annually.

There is nothing unusual in the fact of this shrinkage in market value. It has been common in greater or less degrees among all securities since the war began. Its importance in this particular discussion is to the estate of which the two stocks formed such a large part. Another phase of the subject is the peculiar psychology of the investor of large means who disregards common-sense methods of business by placing "all his eggs in one basket."

Nationalization of Both Companies

We may assume with reasonable correctness that this estate made its investment in American Telephone & Telegraph and Western Union shares when they were selling at fairly high prices. It is quite possible that it "traded out" of a languishing lot of railroad stocks into these others, both for the larger return on investment and the stability of principal. One might easily have argued a few years ago that the day of big profits for the railroads was over, under severe rate regulation, but that the development of the telephone and the use of the telegraph and cable after the war would be greatly enlarged. The dissolution of these two companies in 1914 on order from the Government seemed to preclude the possibility that they would ever be joined together by this Government in the national interest. Yet to-day we see the same effort under federal authority which Theodore Vail and his associates made originally and which was condemned by officers of the Government. Is it not the case of the railroads and the Government over again?

So-Called "Home" Properties

Whatever the motive for investment in the stocks of these companies, there should have been better judgment than to have put so large a portion of the whole in one kind of securities. There is the investment principle of geographical distribution and also that of distribution into different sets of securities. It has been one of the faults of New England investors that they began and

ended their purchases in local properties. The results of this policy are now witnessed in widespread distress among estates which bought New Haven, Boston & Maine, and Boston Elevated, and are finally brought to wonder what is to happen to their holdings of American Telephone. All of these were "home" properties about which everyone knew or thought he knew a great deal, and they were every day visible. Possibly some of the individuals who made these local investments are not subject to blame. Their vision was limited. The same cannot be said of boards of directors or trustees of large fiduciary institutions in New England which should have been closer to actual conditions than they were, or when they discovered them should have had the moral courage to make exchanges into more stable investment and so saved their principal from such great depreciation.

The Stockholding Army

The three American corporations in whose securities more individuals have placed their trust than in any others, are the United States Steel Corporation, the Pennsylvania Railroad, and the American Telephone & Telegraph. The attraction in the first instance has always been that of a possible large appreciation in market value coupled with high return on capital. The record of the common shares has justified this. When the Steel Corporation declared its quarterly dividend at the end of July it had returned to the common shareholders in cash, since 1915, the equivalent of the price of the stock in the winter of that year. Those who have gradually been building up their holdings of Pennsylvania Railroad stock have been impelled chiefly by the investment motive. They were always to be found buying a few more shares in earlier years when the stock dropped to 120, providing a return of 5 per cent., and they seldom failed to take the new stock offered to them at par. Nearly 100,000 different individuals, mostly women dependent on their income, bought and paid for this stock to the extent of several hundred million dollars' worth in the decade from 1903 to 1913. It was the same class of people, again a large proportion women, who bought American Telephone from 130 to 135 for the 6 per cent. yield at those prices and the "absolute security" that it afforded. According to the latest reports this stockholding army also had enrolled nearly 100,000 individuals.

Other Corporation Stocks

In the past five years each of these companies has had its credit affected temporarily by Government interference with its operating and financial affairs. The suit to dissolve the United States Steel Corporation has been abandoned for the period of the war though it has just been determined that the International Harvester Company shall separate itself into various parts. The taking over by the Government of the operations of the railroads has, for a considerable period, brought great disturbance of mind to holders of Pennsylvania shares. Owing to the failure to complete the contract and pay the agreed rentals, the company was placed in the very unusual position of being compelled to borrow money for current disbursements. It has, fortunately, not been forced to interrupt the record of many years of dividend payments, though at one time it seemed possible that it might have to defer action for a few weeks. Finally, the American Telephone & Telegraph Company has been taken out of the hands of those who have created and developed its delicate organization and given over to the Post Office Department. Looking to the precedent of political administration of the post and wires in Great Britain and France, shareholders in neither the American Telephone nor Western Union companies have been much gratified by the advent of Government operation nor have they been placated by statements from the Postmaster General that satisfactory compensation would be granted and regular interest and dividends paid.

What Is "Adequate Compensation"?

It is quite possible that the holders of both Pennsylvania Railroad and the Telephone & Telegraph Company stocks have been more alarmed than they should be. It has taken a great deal of pressure on the part of owners of railroad securities to convince the Railroad Administration that a contract such as they are entitled to must be positive and clear in its meaning and not leave to contingent conditions the question of payment of interest on bonds and notes or to sinking funds; must be equally specific in regard to payment of dividends earned during the three-year test period and must place a positive liability on the Government for reimbursement for losses of traffic or to property during the period of federal occupancy.

It is such lack of concrete promise that has led investors in railroad securities to

fear that the Government did not intend to live up to the spirit of the law under which the carriers were taken over and that there was a great deal of leeway for gaining possession of valuable properties after the war, at a small cost. If these obligations are met as they should be—and at this writing it looks as though the agreement would be made generally satisfactory—less anxiety would be felt by owners of other bonds and stocks that are now coming under Govern-

ment control. The promises so far made to the American Telephone & Telegraph and Western Union companies have been as vague and intangible as those with which the railroad investor was faced after the first draft of the contract by the Administration's representatives. A more complete definition of "adequate compensation" would do much to ease the state of mind of many thousand investors in what have been regarded as among America's premier public utilities.

INVESTORS' QUERIES AND ANSWERS

No. 966. SOME POINTS OF DISCRIMINATION AMONG INVESTMENTS

I am told that the Government has guaranteed interest on the bonds of the railroads under its control. If this is so, why do these bonds still continue to sell to yield as much as 10 and 15 per cent.? Do any railroad bonds ever fail of redemption at maturity? If so, how are they ultimately adjusted? Tell me how to determine the priority claim as between bonds and short term notes. What is the distinction between first and second class municipal bonds? Are any of them ever in default and if so, what is the outcome? Why is it that some of the bonds of the Illinois Central sell as low as 60 when the Company claims a sixty-three years' unbroken record for the payment of dividends?

Your information about the status of railroad bonds, under the plan of control by the Federal Government for the duration of the war, is not altogether correct. The Government does not directly guarantee interest on railroad bonds. It does agree, however, to allow the railroads an amount of net income which virtually guarantees the ability of the railroads to continue not only to pay interest on their funded indebtedness but also in many cases, dividends on their stocks. This arrangement affects practically no change in the status of the bonds of any given company, taken as a group. By this we mean that the same differences will continue to exist between the well secured high-grade investment bonds and the poorly secured low-grade speculative bonds.

It has happened, in a great many instances, that railroad bonds have failed of redemption at maturity. Sometimes the holders of poorly secured issues have been confronted with total loss. In other instances it has required the investment of additional capital in the form of assessments in reorganization to save the original investment from loss. No general rule can be laid down for the treatment of defaulted railroad bonds in reorganization. Circumstances differ in each case and different methods of treatment have to be worked out in accordance with the importance of the property on which the bonds are secured, and in accordance with the financial situation prevailing at the time reorganization is undertaken. Nor can any general statement be made in regard to the status of short term railroad notes. Some issues of securities of this type are protected in such a way as to give

them a favorable position in reorganization. For the most part, however, such notes are issued in the form of unsecured obligations or plain promises to pay, and in such cases their claims upon assets and earnings is junior to the claim on mortgage bonds. Unsecured notes, as a rule, stand just ahead of the issuing corporation's capital stock, which, as you may know, represents nothing but partnership participation or proprietorship interest.

There are different kinds of municipal bonds, the two principal ones being those which are direct obligations of the issuing municipalities, supported by the general taxing power, and those which are not direct obligations but which are supported by special taxes, levied only against the particular property benefited by the improvements for which the bonds are issued. By far the larger class of municipal bonds is composed of direct obligations. These are subdivided in the investment market into different classes in accordance with the size of the municipalities, the proportion of outstanding bonded indebtedness to the assessed valuation of real property and the degree of marketability possessed by the bonds. This last factor is determined very largely by the first two mentioned. The general record of municipal bonds in this country has been an exceptionally clean one for the last few decades. As a matter of fact, the records do not show any actual default of principal or interest on direct municipal obligations during this period although there have been a few cases of delay. This is one reason, in addition to the fact that such bonds are entirely exempt from Federal taxes, and in most States from local taxes, why municipals have lately been in such favor among private investors, both large and small.

If you will take careful note you will see that the Illinois Central bonds selling at around 60 are those which bear interest at the relatively low rates of 3 and 3½ per cent. The extended 3½ per cent. of 1951, for example, are now quoted at about 63, and the Omaha Division 3 per cent. of 1951 are now quoted at about 58½. These prices represent a yield of about 6 per cent. net on the investment which is not altogether unusual for these times of high money rates.